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ABSTRACT

Because of the extensiveness of the course outline for Math 201 (Manitoba Department of Education), schools would have had to purchase several different textbooks to cover the material adequately. Therefore, a set of materials to supplement the guide was developed. The exercises, projects, and reviews contained in this package are keyed to the 201 portion of the "Mathematics 204, 201, 200 Interim Guide (1982)." Arranged according to the modules of the guide, they are coded in the left-hand margin to the objectives of the Math 201 program. The first section consists of core topic exercises for consumer mathematics, geometry, and algebra. The second section consists of optional exercises for: (1) calculators/calculating machines; (2) business mathematics (financial operations, income statements, division of business profits/losses); (3) vocational mathematics (building trades, mechanical trades, electrical trades); and (4) general mathematics (problem-solving strategies, probability, owning/operating an automobile, and cost of living). In addition to core and supplemental exercises, answer keys, notes to teachers (including instructional strategies), supplementary materials, and suggestions for student projects are provided. (Author/MP)

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curriculum support series

exercises to accompany

mathematics 201

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province of manitoba
department of education 1982

EXERCISES TO ACCOMPANY MATHEMATICS 201

Manitoba Department of Education

1982

ISBN 0-86497-100-1

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USE OF THE DOCUMENT

DESCRIPTION

Because of the extensiveness of the course outline for Math 201, schools would have had to purchase several different textbooks in order to cover the material adequately. As this would have been unacceptable to both schools and teachers, the Curriculum Development Branch commissioned a set of materials to supplement the guide.

During the summer of 1982, a number of 01 Mathematics Development-Writing Committee members and Math 201 pilot teachers met to prepare this series of sample exercises, questions and projects. The object has been to help teachers confronted with the task of implementing a new program without a text.

FORMAT

The exercises, projects and reviews contained in this package are keyed to the Mathematics 201 portion of the Mathematics 204, 201, 200 Interim Guide (1982). Arranged according to the modules of the guide, they are coded in the left-hand margin to the objectives of the Math 201 program. Review exercises follow either the sub-topics within each module or the entire unit. Answers for all exercises are provided at the end of each unit to assist both students and teachers. Where necessary, blank forms pertaining to the examples under consideration have been provided for teacher use.

C.1. CONSUMER MATHEMATICS

A.1 1. Compute the gross earnings of a person who worked 38 hours and is paid at a rate of $3.95 per hour.

2. Find the gross earnings for working 39.5 hours at a rate of $4.05 per hour.

3. An employee worked the following hours last week: M-8, T-7.5, W-7.75, T-6.5, and F-8. The rate of pay is $7.65 per hour. Find the gross pay of the employee.

4. Compute the weekly gross earnings for these employees. Time and a half is paid for all hours over 40 in a given week.

	Employee Name	Hourly Rate	Mon.	Tues.	Wed.	Thurs.	Fri.
a)	S. O'Reilly	$5.00	8	7.75	9	10	8
b)	J. Labossiere	$7.15	8	8	9.5	8	8
c)	K. Kaminski	$3.98	7.5	10	8	7.5	8
d)	P. Green	$8.48	7.75	8.5	8.5	8	8

5. Compute the weekly gross earnings for the employees below. They work an 8 hour day. Time and a half is paid for work over 8 hours each day.

	Employee Name	Hourly Rate	Mon.	Tues.	Wed.	Thurs.	Fri.
a)	J. M. Longclaws	$5.00	8	8	8.5	8.5	7.5
b)	L. Thatcher	$7.25	8	7.75	8	10	7.75
c)	A.P. Littlestar	$3.90	8	8	9.5	8	8
d)	B. Riel	$8.58	9	8	7.75	9.5	8

6. In the following two problems the regular day is from 8:00 to 5:00 with one hour for lunch. There is a penalty of 1/4 hour for every 1/4 hour or part thereof that an employee is late or departs early. Time and a half is paid on a daily basis for all hours over 8 and Saturday work is paid at time and a half. Find the gross salary for the week.

a) Regular rate is $4.35

NAME Bruce Andrews **EMPLOYEE #** 36

SOCIAL INSURANCE # 65985192

WEEK ENDING August 4, 19-

CLOCK CARD

DAY	MORNING		AFTERNOON		EXTRA		HOURS
	IN	OUT	IN	OUT	IN	OUT	
MON.	8:02	12:00	12:58	5:00			
TUE.	7:58	12:02	1:03	4:45			
WED.	7:55	11:55	1:00	5:04	5:30	7:35	
THUR.	8:10	12:00	1:30	5:05			
FRI.	7:50	12:00	12:50	5:01			
SAT.					8:00	10:30	
SUN.							

	HOURS	RATE	EARNINGS
REGULAR		$4.35	
OVERTIME			
SUNDAY OVERTIME			
TOTAL HOURS		GROSS EARNINGS	

b) Regular rate is $9.45.

NAME Alice Bruce EMPLOYEE # ________

SOCIAL INSURANCE # 91564982

WEEK ENDING: August 4, 19-

CLOCK CARD

DAY	MORNING		AFTERNOON		EXTRA		HOURS
	IN	OUT	IN	OUT	IN	OUT	
MON.	7:56	11:00	1:00	5:00			
TUE.	7:50	12:00	12:58	4:45			
WED.	8:14	12:05	12:57	5:05	5:15	7:32	
THUR.	8:01	12:00	1:00	5:00	5:30	6:46	
FRI.	7:59	11:56	12:59	5:01			
SAT.							
SUN.							

	HOURS	RATE	EARNINGS
REGULAR		$9.45	
OVERTIME			
SUNDAY OVERTIME			
TOTAL HOURS		GROSS EARNINGS	

7. Find the double time rate for an employee whose regular rate is $4.40 per hour.

8. One particular week an assembly worker put in 52 hours (40 were regular hours, 6 were paid at time and a half, and the remainder at double time). Find the worker's gross pay if the regular rate of pay was $8.95 per hour.

A.2.b 1. Find the commission earned by the sales representatives in each of the following:

	Sales	Commission Rate	Commission
a)	$5000	10%	
b)	$6550	12%	
c)	$995.50	9%	
d)	$3690.38	8.1%	
e)	$946.51	9-3/4%	
f)	$10 500	6.5%	
g)	$15 650.50	5.75%	

2. A real estate agent will charge a commission rate of 6.5% on the sale of a house. Last month an agent sold three houses for: $45 000, $52 000, and $30 000. What was the amount of commission?

3. In a week an Avon lady made the following sales: $10.95, $21.80, $36.73, $11.66, and $98.50. Her commission rate is 27%. Find her commission for the week.

4. A local car dealer pays his employees on a straight commission basis, with a commission rate of 12%. Find the commission on a car that sold for $10 775.00.

A.2.b 1. A salesman receives 8% commission on the first thousand dollars of his sales, and 15% on all sales in excess of a thousand dollars. If his sales for the past week amounted to $5000, what was his total commission?

2. A company sets up the following commission rate scale: 10% on sales up to $5000; 15% on sales over $5000. Find the commission earned by the following:

a) M. Gasket with sales of $10 000
b) J. M. Friesen with sales of $4000
c) H. Honeycutt with sales of $15 000.

3. Heavy Equipment Ltd. pays its sales representatives using this commission rate schedule. 2-1/2% on all sales up to $50 000; 4% on all sales over $50 000 to $75 000; 6% of all sales over $75 000. Find the commission of these representatives.

a)	Tripper:	$60 000
b)	Maude:	$80 000
c)	Clark:	$45 000
d)	Bennett:	$72 500
e)	Jessie:	$90 000
f)	Harder:	$58 750

A.3 1. Find the gross monthly pay for these employees who are paid on a salary plus commission basis.

	Employee	Salary	Sales	Commission Rate	Commission	Gross Pay
a)	Bench	$ 300	$2000	15%		
b)	Santana	$ 300	$5000	10%		
c)	Salvador	$ 500	$4000	10%		
d)	Pharo	$ 450	$7000	9.5%		
e)	Bertinilli	$ 500	$6500	9.25%		

2. J. Suderman, a salesclerk in a household appliance section of a department store receives a regular salary of $140 per week, plus 5% commission on sales that she makes in excess of $900. Last week her sales amounted to $3150. What were her total earnings for the week?

3. Salesman 1 earns a salary of $150 a week with 5% commission on all sales plus an additional 2% on sales over $3000. Salesman 2 earns $150 a week with 6% commission on all sales. One week they both sold $6000 worth of goods. Which salesman earned the most and by how much?

4. A company will pay its sales personnel a 3.5% commission on all sales if the sales exceed $7000. J. Fleming has a salary of $400 a week. This week sales were $8000. How much did J. Fleming gross?

TABLE 176

WEEKLY TAX DEDUCTIONS
Basis—52 Pay Periods per Year

RETENUES D'IMPÔT PAR SEMAINE
Base – 52 périodes de paie par année

WEEKLY PAY Use appropriate bracket – PAIE PAR SEMAINE Utilisez le palier approprié	IF THE EMPLOYEE'S "NET CLAIM CODE" ON FORM TD1 IS — SI LE «CODE DE RÉCLAMATION NETTE» DE L'EMPLOYÉ SELON LA FORMULE TD1 EST DE													See note on page 18. Voir remarque p. 18.
	1	2	3	4	5	6	7	8	9	10	11	12	13	
	DEDUCT FROM EACH PAY—DÉDUISEZ SUR CHAQUE PAIE													Column A Colonne A
$ 175.00 - 176.99	22.85	21.20	19.00	17.40	15.50	13.45	11.10	8.45	5.75	3.30				
177.00 - 178.99	23.40	21.75	19.50	17.90	16.00	13.95	11.65	9.00	6.25	3.80				
179.00 - 180.99	24.00	22.30	20.05	18.45	16.55	14.50	12.20	9.50	6.75	4.30				
181.00 - 182.99	24.55	22.90	20.60	19.00	17.10	15.05	12.75	10.00	7.25	4.80	1.20			
183.00 - 184.99	25.15	23.45	21.15	19.55	17.65	15.60	13.25	10.50	7.80	5.30	2.70			
185.00 - 186.99	25.70	24.05	21.70	20.05	18.15	16.10	13.80	11.00	8.30	5.80	3.50			
187.00 - 188.99	26.25	24.60	22.30	20.60	18.70	16.65	14.35	11.55	8.80	6.35	4.00			
189.00 - 190.99	26.85	25.15	22.85	21.15	19.25	17.20	14.90	12.10	9.30	6.85	4.50	.75		
191.00 - 192.99	27.40	25.75	23.40	21.75	19.80	17.75	15.40	12.60	9.80	7.35	5.05	2.20		
193.00 - 194.99	27.95	26.30	24.00	22.30	20.35	18.25	15.95	13.15	10.30	7.85	5.55	3.35		
195.00 - 196.99	28.55	26.85	24.55	22.85	20.85	18.80	16.50	13.70	10.85	8.35	6.05	3.85		
197.00 - 198.99	29.10	27.45	25.15	23.45	21.45	19.35	17.05	14.25	11.35	8.85	6.55	4.35	1.25	1.25
199.00 - 200.99	29.55	28.00	25.70	24.00	22.00	19.90	17.55	14.75	11.90	9.40	7.05	4.85	2.70	2.15
201.00 - 202.99	30.25	28.55	26.25	24.55	22.60	20.40	18.10	15.30	12.45	9.90	7.55	5.40	3.50	2.15
203.00 - 204.99	30.80	29.15	26.85	25.15	23.15	21.00	18.65	15.85	12.95	10.40	8.10	5.90	4.00	2.15
205.00 - 206.99	31.35	29.70	27.40	25.70	23.70	21.35	19.20	16.40	13.50	10.90	8.60	6.40	4.55	2.15
207.00 - 208.99	31.95	30.25	27.95	26.30	24.30	22.10	19.70	16.90	14.05	11.45	9.10	6.90	5.05	2.15
209.00 - 210.99	32.50	30.85	28.55	26.85	24.85	22.70	20.25	17.45	14.60	11.95	9.60	7.40	5.55	2.15
211.00 - 212.99	33.05	31.40	29.10	27.40	25.40	23.25	20.60	18.00	15.10	12.50	10.10	7.90	6.05	2.15
213.00 - 214.99	33.65	31.95	29.65	28.00	26.00	23.80	21.35	18.55	15.65	13.05	10.60	8.45	6.55	2.15
215.00 - 216.99	34.20	32.55	30.25	28.55	26.55	24.40	21.95	19.05	16.20	13.60	11.15	8.95	7.05	2.15
217.00 - 218.99	34.80	33.10	30.80	29.10	27.10	24.95	22.50	19.60	16.75	14.10	11.65	9.45	7.60	2.15
219.00 - 220.99	35.35	33.70	31.35	29.70	27.70	25.50	23.05	20.15	17.25	14.65	12.20	9.95	8.10	2.15
221.00 - 222.99	35.90	34.25	31.95	30.25	28.25	26.10	23.65	20.70	17.80	15.20	12.75	10.45	8.60	2.15
223.00 - 224.99	36.50	34.80	32.50	30.80	28.80	26.65	24.20	21.25	18.35	15.75	13.30	10.95	9.10	2.15
225.00 - 229.99	37.45	35.80	33.50	31.80	29.80	27.65	25.20	22.25	19.30	16.65	14.20	11.90	10.00	2.15
230.00 - 234.99	38.90	37.25	34.90	33.25	31.25	29.05	26.60	23.65	20.65	18.00	15.55	13.25	11.25	2.15
235.00 - 239.99	40.30	38.65	36.35	34.65	32.65	30.50	28.05	25.10	22.05	19.35	16.90	14.60	12.60	2.15
240.00 - 244.99	41.80	40.05	37.75	36.05	34.05	31.90	29.45	26.50	23.45	20.70	18.25	15.95	13.95	2.15
245.00 - 249.99	43.35	41.50	39.20	37.50	35.50	33.30	30.90	27.90	24.90	22.15	19.60	17.30	15.30	2.15
250.00 - 254.99	44.90	43.10	40.60	38.90	36.90	34.75	32.30	29.35	26.30	23.55	20.95	18.60	16.65	2.15
255.00 - 259.99	46.50	44.65	42.10	40.35	38.35	36.15	33.70	30.75	27.70	24.95	22.40	19.95	18.00	2.15
260.00 - 264.99	48.05	46.20	43.65	41.80	39.75	37.60	35.15	32.20	29.15	26.40	23.80	21.35	19.35	2.15
265.00 - 269.99	49.65	47.80	45.25	43.35	41.15	39.00	36.55	33.60	30.55	27.80	25.20	22.75	20.70	2.15
270.00 - 274.99	51.20	49.35	46.80	44.95	42.75	40.40	37.95	35.00	32.00	29.20	26.65	24.20	22.10	2.15
275.00 - 279.99	52.75	50.90	48.35	46.50	44.30	41.90	39.40	36.45	33.40	30.65	28.05	25.60	23.50	2.15
280.00 - 284.99	54.35	52.50	49.95	48.05	45.85	43.45	40.80	37.85	34.80	32.05	29.45	27.00	24.95	2.15
285.00 - 289.99	55.90	54.05	51.50	49.65	47.45	45.05	42.35	39.25	36.25	33.50	30.90	28.45	26.35	2.15
290.00 - 294.99	57.45	55.65	53.10	51.20	49.00	[illegible]	43.90	40.70	37.65	34.90	32.30	29.85	27.80	2.15
295.00 - 299.99	59.05	57.20	54.65	52.80	50.55	[illegible]	45.45	42.20	39.05	36.30	33.75	31.30	29.20	2.15

TABLE 376

WEEKLY TAX DEDUCTIONS
Basis—52 Pay Periods per Year

RETENUES D'IMPÔT PAR SEMAINE
Base – 52 périodes de paie par année

WEEKLY PAY Use appropriate bracket — PAIE PAR SEMAINE Utilisez le palier approprié	IF THE EMPLOYEE'S "NET CLAIM CODE" ON FORM TD1 IS — SI LE « CODE DE RÉCLAMATION NETTE » DE L'EMPLOYÉ SELON LA FORMULE TD1 EST DE													See note on page 18. Voir remarque p. 18.
	1	2	3	4	5	6	7	8	9	10	11	12	13	
	DEDUCT FROM EACH PAY—DÉDUISEZ SUR CHAQUE PAIE													Column A Colonne A
300.00 - 304.99	60.60	58.75	56.20	54.35	52.15	49.75	47.05	43.80	40.50	37.75	35.15	32.70	30.60	2.15
305.00 - 309.99	62.15	60.35	57.80	55.90	53.70	51.30	48.60	45.35	42.00	39.15	36.55	34.10	32.05	2.15
310.00 - 314.99	63.65	61.90	59.35	57.50	55.30	52.90	50.20	46.90	43.55	40.55	38.00	35.55	33.45	2.15
315.00 - 319.99	65.25	63.40	60.90	59.05	56.85	54.45	51.75	48.50	45.10	42.10	39.40	36.95	34.90	2.15
320.00 - 324.99	66.90	65.00	62.50	60.65	58.45	56.05	53.35	50.05	46.70	43.65	40.85	38.40	36.30	2.15
325.00 - 329.99	68.55	66.65	64.05	62.25	60.05	57.65	54.95	51.70	48.35	45.30	42.40	39.85	37.80	2.15
330.00 - 334.99	70.25	68.35	65.70	63.80	61.65	59.25	56.55	53.30	49.95	46.90	44.05	41.35	39.25	2.15
335.00 - 339.99	71.90	70.00	67.40	65.45	63.20	60.90	58.20	54.90	51.55	48.50	45.65	42.95	40.70	2.25
340.00 - 344.99	73.60	71.70	69.05	67.10	64.85	62.50	59.80	56.55	53.20	50.15	47.25	44.55	42.25	2.30
345.00 - 349.99	75.25	73.35	70.70	68.80	66.50	64.05	61.40	58.15	54.80	51.75	48.90	46.20	43.90	2.30
350.00 - 354.99	76.90	75.00	72.40	70.45	68.20	65.70	62.95	59.75	56.40	53.35	50.50	47.80	45.50	2.30
355.00 - 359.99	78.60	76.70	74.05	72.15	69.85	67.40	64.60	61.40	58.05	55.00	52.10	49.40	47.10	2.30
360.00 - 364.99	80.25	78.35	75.70	73.80	71.50	69.05	66.25	62.95	59.65	56.60	53.75	51.05	48.75	2.30
365.00 - 369.99	81.90	80.00	77.40	75.45	73.20	70.70	67.95	64.55	61.25	58.20	55.35	52.65	50.35	2.30
370.00 - 374.99	83.50	81.70	79.05	77.15	74.85	72.40	69.60	66.25	62.85	59.85	56.95	54.25	51.95	2.30
375.00 - 379.99	85.25	83.35	80.70	78.80	76.50	74.05	71.25	67.90	64.45	61.45	58.60	55.90	53.60	2.30
380.00 - 384.99	86.90	85.00	82.40	80.45	78.20	75.70	72.95	69.55	66.[illegible]	63.00	60.20	57.50	55.20	2.30
385.00 - 389.99	88.75	86.65	84.05	82.15	79.85	77.40	74.60	71.25	67.[illegible]	64.60	61.80	59.10	56.80	2.30
390.00 - 394.99	90.55	88.50	85.70	83.80	81.50	79.05	76.25	72.90	69.45	66.30	63.35	60.75	58.45	2.30
395.00 - 399.99	92.35	90.30	87.45	85.45	83.20	80.70	77.95	74.55	71.10	67.95	65.00	62.35	60.05	2.30
400.00 - 404.99	94.15	92.10	89.25	87.15	84.85	82.40	79.60	76.25	72.75	69.60	66.65	63.90	61.65	2.30
405.00 - 409.99	96.00	93.90	91.05	88.95	86.50	84.05	81.25	77.90	74.45	71.30	68.35	65.55	63.20	2.35
410.00 - 414.99	97.80	95.75	92.85	90.80	88.30	85.70	82.95	79.55	76.10	72.95	70.00	67.20	64.85	2.35
415.00 - 419.99	99.60	97.55	94.70	92.60	90.10	87.35	84.60	81.25	77.75	74.65	71.70	68.90	66.50	2.40
420.00 - 424.99	101.40	99.35	96.50	94.40	91.95	89.05	86.25	82.90	79.45	76.30	73.35	70.55	68.20	2.40
425.00 - 429.99	103.25	101.15	98.30	96.20	93.75	91.05	88.00	84.55	81.10	77.95	75.00	72.20	69.85	2.40
430.00 - 434.99	105.05	103.00	100.10	98.05	95.55	92.85	89.85	86.25	82.75	79.55	76.70	73.90	71.50	2.40
435.00 - 439.99	106.85	104.80	101.95	99.85	97.35	94.70	91.65	88.00	84.45	81.30	78.35	75.55	73.20	2.40
440.00 - 444.99	108.65	106.60	103.75	101.65	99.20	96.50	93.45	89.80	86.10	82.95	80.00	77.20	74.85	2.40
445.00 - 449.99	110.50	108.40	105.55	103.45	101.00	98.30	95.25	91.60	87.85	84.65	81.70	78.90	76.50	2.40
450.00 - 454.99	112.40	110.25	107.35	105.30	102.80	100.10	97.10	93.45	89.65	86.30	83.35	80.55	78.20	2.40
455.00 - 459.99	114.40	112.10	109.20	107.10	104.60	101.95	98.90	95.25	91.45	88.05	85.00	82.25	79.85	2.40
460.00 - 464.99	116.45	114.15	111.00	108.90	106.45	103.75	100.70	97.05	93.30	89.85	86.65	83.90	81.50	2.40
465.00 - 469.99	118.45	116.15	112.95	110.70	108.25	105.55	102.50	98.85	95.10	91.70	88.50	85.55	83.20	2.40
470.00 - 474.99	120.50	118.20	115.00	112.65	110.05	107.35	104.35	100.70	96.90	93.50	90.30	87.25	84.85	2.40
475.00 - 484.99	123.55	121.25	118.05	115.70	112.90	110.10	107.05	103.40	99.65	96.20	93.00	90.00	87.40	2.60
485.00 - 494.99	127.60	125.30	122.10	119.75	117.00	113.95	110.70	107.00	103.25	99.85	96.65	93.60	91.00	2.60
495.00 - 504.99	131.65	129.35	126.15	123.80	121.05	118.05	114.85	110.65	106.90	103.45	100.25	97.25	94.65	2.60
505.00 - [illegible].99	135.70	133.40	130.20	127.85	125.10	122[illegible]	118.70	114.60	110.50	107.10	103.90	100.85	[illegible]25	2.60
515.00 - 524.99	139.80	137.45	134.25	131.95	129.15	126.[illegible]	122.75	118.65	114.45	110.70	107.50	104.50	[illegible].90	2.60

CANADA PENSION PLAN CONTRIBUTIONS AND UNEMPLOYMENT INSURANCE PREMIUMS

COTISATIONS AU RÉGIME DE PENSIONS DU CANADA ET PRIMES D'ASSURANCE-CHÔMAGE

WEEKLY PAY PERIOD — *PÉRIODE HEBDOMADAIRE DE PAIE*

$264.73 – $865.83

Remuneration *Rémunération* From-*de*	To-*à*	C.P.P. *R.P.C.*	U.I. Premium *Prime d'a.-c.*
264.73 -	265.27	4.32	3.58
265.28 -	265.83	4.33	3.58
265.84 -	266.38	4.34	3.59
266.39 -	266.94	4.35	3.60
266.95 -	267.49	4.36	3.61
267.50 -	268.05	4.37	3.61
268.06 -	268.61	4.38	3.62
268.62 -	269.16	4.39	3.63
269.17 -	269.72	4.40	3.64
269.73 -	270.27	4.41	3.65
270.28 -	270.83	4.42	3.65
270.84 -	271.38	4.43	3.66
271.39 -	271.94	4.44	3.67
271.95 -	272.49	4.45	3.67
272.50 -	273.05	4.46	3.68
273.06 -	273.61	4.47	3.69
273.62 -	274.16	4.48	3.70
274.17 -	274.72	4.49	3.70
274.73 -	275.27	4.50	3.71
275.28 -	275.83	4.51	3.72
275.84 -	276.38	4.52	3.73
276.39 -	276.94	4.53	3.73
276.95 -	277.49	4.54	3.74
277.50 -	278.05	4.55	3.75
278.06 -	278.61	4.56	3.76
278.62 -	279.16	4.57	3.77
279.17 -	279.72	4.58	3.77
279.73 -	280.27	4.59	3.78
280.28 -	280.83	4.60	3.79
280.84 -	281.38	4.61	3.79
281.39 -	281.94	4.62	3.80
281.95 -	282.49	4.63	3.81
282.50 -	283.05	4.64	3.82
283.06 -	283.61	4.65	3.82
283.62 -	284.16	4.66	3.83
284.17 -	284.72	4.67	3.84
284.73 -	285.27	4.68	3.85
285.28 -	285.83	4.69	3.85
285.84 -	286.38	4.70	3.86
286.39 -	286.94	4.71	3.87
286.95 -	287.49	4.72	3.88
287.50 -	288.05	4.73	3.88
288.06 -	288.61	4.74	3.89
288.62 -	289.16	4.75	3.90
289.17 -	289.72	4.76	3.91
289.73 -	290.27	4.77	3.92
290.28 -	290.83	4.78	3.92
290.84 -	295.83	4.83	3.92
295.84 -	300.83	4.92	3.92
300.84 -	305.83	5.01	3.92
305.84 -	310.83	5.10	3.92
310.84 -	315.83	5.19	3.92
315.84 -	320.83	5.28	3.92
320.84 -	325.83	5.37	3.92
325.84 -	330.83	5.46	3.92
330.84 -	335.83	5.55	3.92
335.84 -	340.83	5.64	3.92
340.84 -	345.83	5.73	3.92
345.84 -	350.83	5.82	3.92
350.84 -	355.83	5.91	3.92
355.84 -	360.83	6.00	3.92
360.84 -	365.83	6.09	3.92
365.84 -	370.83	6.18	3.92
370.84 -	375.83	6.27	3.92
375.84 -	380.83	6.36	3.92
380.84 -	385.83	6.45	3.92
385.84 -	390.83	6.54	3.92
390.84 -	395.83	6.63	3.92
395.84 -	400.83	6.72	3.92
400.84 -	405.83	6.81	3.92
405.84 -	410.83	6.90	3.92
410.84 -	415.83	6.99	3.92
$ 415.84 -	420.83	7.08	3.92
420.84 -	425.83	7.17	3.92
425.84 -	430.83	7.26	3.92
430.84 -	435.83	7.35	3.92
435.84 -	440.83	7.44	3.92
440.84 -	445.83	7.53	3.92
445.84 -	450.83	7.62	3.92
450.84 -	455.83	7.71	3.92
455.84 -	460.83	7.80	3.92
460.84 -	465.83	7.89	3.92
465.84 -	470.83	7.98	3.92
470.84 -	475.83	8.07	3.92
475.84 -	480.83	8.16	3.92
480.84 -	485.83	8.25	3.92
485.84 -	490.83	8.34	3.92
490.84 -	495.83	8.43	3.92
495.84 -	500.83	8.52	3.92
500.84 -	505.83	8.61	3.92
505.84 -	510.83	8.70	3.92
510.84 -	515.83	8.79	3.92
515.84 -	520.83	8.88	3.92
520.84 -	525.83	8.97	3.92
525.84 -	530.83	9.06	3.92
530.84 -	535.83	9.15	3.92
535.84 -	540.83	9.24	3.92
540.84 -	545.83	9.33	3.92
545.84 -	550.83	9.42	3.92
550.84 -	555.83	9.51	3.92
555.84 -	560.83	9.60	3.92
560.84 -	565.83	9.69	3.92
565.84 -	570.83	9.78	3.92
570.84 -	575.83	9.87	3.92
575.84 -	580.83	9.96	3.92
580.84 -	585.83	10.05	3.92
585.84 -	590.83	10.14	3.92
590.84 -	595.83	10.23	3.92
595.84 -	600.83	10.32	3.92
600.84 -	605.83	10.41	3.92
605.84 -	610.83	10.50	3.92
610.84 -	615.83	10.59	3.92
615.84 -	620.83	10.68	3.92
620.84 -	625.83	10.77	3.92
625.84 -	630.83	10.86	3.92
630.84 -	635.83	10.95	3.92
635.84 -	640.83	11.04	3.92
640.84 -	645.83	11.13	3.92
645.84 -	650.83	11.22	3.92
650.84 -	655.83	11.31	3.92
655.84 -	660.83	11.40	3.92
660.84 -	665.83	11.49	3.92
665.84 -	670.83	11.58	3.92
670.84 -	675.83	11.67	3.92
675.84 -	680.83	11.76	3.92
680.84 -	685.83	11.85	3.92
685.84 -	690.83	11.94	3.92
690.84 -	695.83	12.03	3.92
695.84 -	700.83	12.12	3.92
700.84 -	705.83	12.21	3.92
705.84 -	710.83	12.30	3.92
710.84 -	715.83	12.39	3.92
715.84 -	720.83	12.48	3.92
720.84 -	725.83	12.57	3.92
725.84 -	730.83	12.66	3.92
730.84 -	735.83	12.75	3.92
735.84 -	740.83	12.84	3.92
740.84 -	745.83	12.93	3.92
745.84 -	750.83	13.02	3.92
750.84 -	755.83	13.11	3.92
755.84 -	760.83	13.20	3.92
760.84 -	765.83	13.29	3.92
765.84 -	770.83	13.38	3.92
770.84 -	775.83	13.47	3.92
$ 775.84 -	780.83	13.56	3.92
780.84 -	785.83	13.65	3.92
785.84 -	790.83	13.74	3.92
790.84 -	795.83	13.83	3.92
795.84 -	800.83	13.92	3.92
800.84 -	805.83	14.01	3.92
805.84 -	810.83	14.10	3.92
810.84 -	815.83	14.19	3.92
815.84 -	820.83	14.28	3.92
820.84 -	825.83	14.37	3.92
825.84 -	830.83	14.46	3.92
830.84 -	835.83	14.55	3.92
835.84 -	840.83	14.64	3.92
840.84 -	845.83	14.73	3.92
845.84 -	850.83	14.82	3.92
850.84 -	855.83	14.91	3.92
855.84 -	860.83	15.00	3.92
860.84 -	865.83	15.09	3.92

"For remuneration in excess of $865.83:
(a) refer to page 18 under "Employee's Contribution – Calculation Method"
(b) the Unemployment Insurance premium is $3.92."

"Si la rémunération dépasse $865.83
a) se reporter à la rubrique «Cotisation de l'employé – Méthode par le calcul», à la page 18
b) la prime d'assurance-chômage est $3.92."

Revenue Canada
Taxation

Revenu Canada
Impôt

EMPLOYEE'S TAX DEDUCTION RETURN
DÉCLARATION DE L'EMPLOYÉ POUR LA RETENUE DE L'IMPÔT

TD1
Rev. 1980

- **Complete and file one copy of this return with your employer**
  - (a) when you commence employment, or
  - (b) within seven days of any change in your exemptions.
- **This return need not be filed by employees claiming the "Basic Personal Exemption" only.**
- If you do not file this return as required, income tax will be deducted as though you were a single person without dependants.
- If you believe there are other exemptions that you could claim on your income tax return you may ask your District Taxation Office whether they may be taken into account in arriving at your tax deduction.
- Do not claim a child or other dependant whose net income for the year will exceed $2,990.
- Net income of your spouse or dependants includes any pension or supplement under the Old Age Security Act or any similar Act of a province, benefits under the Canada or Quebec Pension Plan and the Unemployment Insurance Act, 1971.

- **Remettez un exemplaire dûment rempli de la présente déclaration à votre employeur**
  - a) au début de votre emploi, ou
  - b) dans les sept jours suivant tout changement dans vos exemptions.
- **Les employés qui demandent uniquement «l'Exemption personnelle de base» n'ont pas besoin de produire cette déclaration.**
- Faute de produire la présente déclaration, ainsi que vous y êtes tenu, l'impôt sur le revenu sera retenu comme si vous étiez célibataire sans personnes à charge.
- Si vous croyez avoir droit à d'autres exemptions dans votre déclaration d'impôt sur le revenu, demandez à votre bureau de district d'impôt si vous pouvez en tenir compte en calculant votre retenue de l'impôt.
- Vous ne pouvez compter un enfant ou une autre personne à charge dont le revenu net pour l'année dépassera $2,990.
- Le revenu net de votre conjoint ou des personnes à votre charge comprend toute pension ou tout supplément en vertu de la Loi sur la sécurité de la vieillesse ou en vertu de toute loi provinciale semblable, ainsi que les prestations du Régime de pensions du Canada, du Régime de rentes du Québec ou de la Loi de 1971 sur l'assurance-chômage.

FAMILY OR LAST NAME (Print) – NOM DE FAMILLE (en caractères d'imprimerie)	USUAL FIRST NAME AND INITIALS – PRÉNOM USUEL ET INITIALES	SOCIAL INSURANCE NUMBER NUMÉRO D'ASSURANCE SOCIALE
ADDRESS – ADRESSE		DATE OF BIRTH (Day, Month, Year) DATE DE NAISSANCE (jour, mois, année)

Complete the "Claim for Exemptions" area on the reverse side and enter your "Net Claim". ▶ $ ◀ Remplissez la section «Exemptions réclamées», au verso, et inscrivez la «Réclamation nette».

Refer to the "Table" below and enter the applicable "Net Claim Code". ▶ ☐ ◀ Consultez la «Table» ci-dessous et inscrivez le «Code de réclamation nette» approprié.

Table of Net Claim Codes
Table des codes de réclamation nette

Net Claim for 1980 *Réclamation nette pour 1980* From – *De* To – *À*	Net Claim Code *Code de réclamation nette*
$2,890 — $2,940	1
2,941 — 3,430	2
3,431 — 3,760	3
3,761 — 4,030	4
4,031 — 4,470	5
4,471 — 4,800	6
4,801 — 5,300	7
5,301 — 5,890	8
5,891 — 6,380	9
6,381 — 6,870	10
6,871 — 7,300	11
7,301 — 7,740	12
7,741 — 8,040	13
8,041 and up – *et plus*	X
Exemption from Tax Deduction as claimed below *Exonération de la retenue de l'impôt réclamée ci-dessous*	0

- Your "Net Claim Code" is used by your employer to determine the tax deduction required from your remuneration.
- Votre employeur utilise votre «Code de réclamation nette» pour déterminer l'impôt à retenir sur votre rémunération.

Claim for Exemption from Tax Deduction – *Valid for current calendar year only.*

This area is to be completed by an individual who is receiving remuneration that is subject to tax deduction but who wishes to claim exemption because "Total estimated income from all sources for the year" including taxable benefits and Family Allowance payments, will be less than the "Net Claim" above. No claim may be made here by a person not resident in Canada for the whole year unless your earnings in Canada will be less than your exemptions apportioned to the period of residence in Canada. If you qualify for this exemption, your "Net Claim Code" is "0".

Demande d'exonération de la retenue de l'impôt – *Valable pour l'année civile en cours seulement*

La présente section doit être remplie par un particulier dont la rémunération est assujettie à la retenue de l'impôt et qui désire en être exonéré parce que le «Total des revenus estimatifs de toutes provenances pour l'année», y compris les avantages imposables et les allocations familiales, sera inférieur à la «Réclamation nette» susmentionnée. Si vous ne résidez pas au Canada pendant toute l'année, vous ne pouvez demander cette exonération, à moins que vous n'estimiez que vos gains au Canada seront inférieurs à vos exemptions proportionnées à votre période de résidence au Canada. Si vous avez droit à la présente exonération, votre «Code de réclamation nette» est «0».

Income to date this year from all sources – *Revenu de toutes provenances jusqu'ici cette année* - - - - - - - - ▶ $________

Estimated income for remainder of year from all sources – *Revenu estimatif de toutes provenances d'ici la fin de l'année* - - ▶ $________

Total estimated income from all sources for the year – *Total des revenus estimatifs de toutes provenances pour l'année* - - ▶ $________

Certification
I HEREBY CERTIFY that the information given in this return is true, correct and complete to the best of my knowledge and belief.

Attestation
JE CERTIFIE que les renseignements donnés dans la présente déclaration sont vrais, exacts et complets pour autant que je sache.

Signature________________ Date________________ 19____

It is a serious offence to make a false return – *Quiconque fait une fausse déclaration commet une infraction grave.*

Warning: An employer should refer a form TD1 containing doubtful statements to the District Taxation Office. Any person who knowingly accepts a form TD1 containing a false or deceptive statement commits a serious offence. Employers must retain completed forms TD1 for inspection by officers of the Department of National Revenue, Taxation.

Form authorized and prescribed by the Minister of National Revenue

Avertissement: L'employeur doit soumettre toute formule TD1 renfermant des déclarations douteuses au bureau de district d'impôt. Quiconque accepte sciemment une formule TD1 renfermant des déclarations fausses ou trompeuses commet une infraction grave. Les employeurs doivent conserver les formules TD1, une fois qu'elles ont été remplies, aux fins d'inspection par les fonctionnaires du ministère du Revenu national, Impôt.
Formule autorisée et prescrite par le ministre du Revenu national

A.4,A.5 Tables Attached.

1. Using the necessary tables fill in this table.

	Gross Pay	CPP	UI	Taxable Income	Exempt. Claim	Claim Code	Income Tax	Net Pay
a)	$300.00				$2900			
b)	$326.50				$3800			
c)	$410.00				$7800			
d)	$309.76				$2890			
e)	$505.89				$3430			
f)	$321.32				$2941			
g)	$435.75				$2890			
h)	$372.96				$4801			

2. Jack Anderson's weekly salary is $395. Find his net pay if his claim code is 2.

3. Paul Wieler works a 40 hour week and receives $7.75 per hour. Time-and-a-half is paid for all hours over 40 in a given week. Last week he worked 44 hours. Find his net pay if the only deductions are CPP, UI, and income tax (Code 1).

4. Agatha Crystal worked the following hours during the week of July 13th: M-8, T-7.5, W-10.5, T-8.5, and F-8. Her company pays daily time and a half based on an 8 hour day. Her regular rate is $7.00 per hour. Calculate her net pay using Code 2 assuming the only deductions are CPP, UI, and income tax.

5. Find Al Passey's net pay for the week. His claim code is 7, his weekly salary is $385, he has union dues of $3.80, dental plan of $1.85, and the usual CPP, UI, income tax deductions.

6. In the following problem the regular day is from 8:00 to 5:00 with one hour for lunch. There is a penalty of 1/4 hour for every 1/4 hour or part thereof that an employee is late or departs early. Time and a half is paid on a daily basis for all hours over 8 and Saturday work is paid at time and a half.

   Using the time information below with a regular rate of pay equal to $8.70 per hour along with the following deductions: UI, CPP, Income Tax (Code 3), Bonds $25, Group Ins. $1.79, and Union Dues $3.95, find the worker's net pay.

Days	Morning		Afternoon		Overtime	
	In	Out	In	Out	In	Out
M	7:56	11:00	1:00	5:00		
T	7:50	12:00	12:58	4:48		
W	8:14	12:05	12:57	5:05	5:15	7:32
T	8:03	12:00	1:00	5:00		
F	7:59	11:56	12:59	5:01		
S						
S						

7. Fill in the missing information. Use the proper tables. The regular rate is $7.10 per hour.

PAYROLL REGISTER

PAY PERIOD ENDING:

EMPLOYEE DATA			NET CLAIM CODE	HOURS		EARNINGS			NON-TAXABLES		TAXABLE EARNINGS	OTHER DEDUCTIONS				TOTAL DEDUCTIONS	NET PAY
No.	SIN	NAME		REG	O/T	REG.	O/T	TOTAL	CPP	UIC		INCOME TAX	GROUP INSCE.	DENTAL PLAN	UN. DUES		
21	123456789	ST. LAURENT	1	40	3								1.76	3.85	3.95		
22	253791123	MAC DONALD	3	40	–								2.09	3.85	3.95		
23	777777111	PEARSON	5	–	–	$350	–						1.86	3.85	–		
24	111666666	TRUDEAU	2	38	2.5								1.76	3.85	3.95		
25	777888999	BENNETT	4	39	3								1.76	–	3.95		

NAME ______________________ EMPLOYEE # ______________

SOCIAL INSURANCE # ________________

WEEK ENDING ______________________

CLOCK CARD

DAY	MORNING		AFTERNOON		EXTRA		HOURS
	IN	OUT	IN	OUT	IN	OUT	
MON.							
TUE.							
WED.							
THUR.							
FRI.							
SAT.							
SUN.							

	HOURS	RATE	EARNINGS
REGULAR			
OVERTIME			
SUNDAY OVERTIME			
TOTAL HOURS		GROSS EARNINGS	

PAYROLL REGISTER

PAY PERIOD ENDING:

EMPLOYEE DATA			NET CLAIM CODE	HOURS		EARNINGS			NON-TAXABLES		TAXABLE EARNINGS	OTHER DEDUCTIONS				TOTAL DEDUCTIONS	NET PAY
NO.	SIN	NAME		REG	O/T	REG.	O/T	TOTAL	CPP	UIC		INCOME TAX	GROUP INSUR.	DENTAL PLAN	UNION DUES		

B

Personal Income Tax

Supplies:
- 2 student workbooks, "Teaching Taxes," for each student
- 1 copy of Exercise No. 1, 1-A, 2 and 2-A for each student
- 1 copy of the blank Sample A form for each student
- 1 transparency of pages 20, 47, 48, 50, 90 and 105 of the student workbook
- 1 copy of instructions for preparing Income Tax forms
- 4 extra copies of page 105 for each student
- 2 extra copies of page 91 for each student
- 1 overhead projector
- 1 fine, black transparency pen

Note: If you have a copy of the Teacher's Manual for Teaching Taxes, you will have copies of all exercises and answer keys.

INCOME TAX MODULE

Instructions

1. Gather up all supplies needed for this lesson.
2. Pass out the T-4 slips (Sample Exercise A) to each student.
3. Put the transparency of the Blank T-4 slip on the overhead.
4. Ask the students to insert their own name, address, and postal code, as the teacher fills in her/his name.
5. Insert "MANITOBA" in Box (A).
6. Insert their own Social Insurance Number or 111 111 111 in Box (B).
7. Explain to the students that everyone has worked for Sunshine Co. Ltd. during 1981.
8. As the teacher writes the amounts on the transparency, the students fill in the following:
   - Box C $10 900, Box D $239.40; Box E $294.84; Box F $250.00; Box G $1150.00; Box H $10 900.00; Box I $10 900; Box J zero; Box K zero; Box L zero.
9. Explain that you paid $185.00 for Union Dues;
   $13.00 for Safety Deposit Box Rental
   $95.00 for tuition fees (you attended a night class at the university)
   $400.00 for Dentist bills
   $35.00 for a donation to Muscular Dystrophy

10. You also received $293.30 in bank interest from the Bank of Montreal in the year 1981.

11. You lived at home during 1981, but you made too much money for your parents to claim you on their Income Tax Form, therefore, you are entitled to fill out the Manitoba Government Tax Credit Program form.

12. Now we are ready to fill out the income tax form.

13. Pass out the 1981 Teaching Taxes workbook to each student.

COMPLETING THE FORM

1. Place the transparency for page 47 on the overhead.

2. Fill in the identification section of the form (see sample).

3. Ask the students what number is in Box C of the T-4 slip. Then insert $10 900.00 on Line 1.

4. Insert zero on Line 2 and 3.

5. Insert $10 900.00 on Line 4.

6. Ask the students to calculate the number on Line 4 x 3% ($10 900 x 3% = $327.00) and place $327.00 on Line 5.

7. Place zero on Line 6 and $327.00 on Line 7, then move the $327.00 over as indicated by the arrow.

8. Subtract $327.00 from $10 900.00 and place $10 573 on Line 8.

9. Remind the students that they are not to place anything on Line 9, 10 or 11. This section is reserved for persons over 65 years of age.

10. Remove the transparency for page 47 and place the transparency for Schedule 4 (page 91) on the overhead.

11. Ask the students to fill in Part B with you (see sample). Drop the total of $292.30 to Part C and then enter this amount on Line 15 of the return.

12. We paid $13.00 for a safety deposit box and we are allowed to claim this amount. Fill out Part D for the Safety Deposit Box Charges and enter this amount on Line 39 of the return.

13. Enter $292.30 in Section E at the bottom of the Schedule 4 (see sample), and then enter $292.30 on Line 51 of the return.

14. Remove the transparency for Schedule 4 and replace it with the transparency for page 47. Add up Line 8 and Line 15 and place the amount, $10 865.30, on Line 24. Then move it over as indicated by the arrow.

15. Remove the transparency for page 47 and replace it with the transparency for page 48. Place $10 865.30 on Line 24 of page 48.

16. Ask the students to look in Box D of their T-4 slip and place the amount on Line 25.

17. Ask the students to look in Box E of their T-4 slip and place the amount on Line 29.

18. Ask the students to look at Box F and place the amount on Line 32. They are also to insert the words (Box F) on the form.

19. Ask the students if there is anything to insert on Line 35. They will say, "Yes." Then insert $250.00 on that line.

20. Ask the students if there is anything to insert on Line 36. They will say, "Yes." Then insert $95.00 on that line.

21. Ask the students if they have inserted $13.00 on Line 39 as instructed on Schedule 4. They are also to insert the words, "SAFETY DEPOSIT BOX" on Line 39.

22. The students are now to add up Lines 25 through to 39 and place the amount on Line 40. Then move that amount over, as indicated by the arrow and subtract Line 40 from Line 24. Place the amount on Line 41.

23. Everyone is allowed to claim $3170.00--insert that amount in the space provided.

24. You are not married and have no children, therefore, you enter zero on Line 42, 43 and 44. Then drop the amount of $3170 down to Line 45 and move the amount over as indicated by the arrow. Then subtract Line 45 from Line 41 and place the amount on Line 46.

25. Explain that all taxpayers have the option of claiming $100 for medical expenses if they do not want to include the medical receipts; OR they can enclose the receipts and possibly claim more than $100.00.

Now, ask them to insert the amount paid to the dentist on Line 48.
Next, ask them to calculate the amount on Line 41 x 3% ($9788 x 3% = $293.64) and place this amount on the line directly below Line 48, and subtract the amount from Line 48.
Next, insert the amount of $35.00 that was donated, and add this amount to $106.36. Place $141.36 on Line 50.

The students must now make a choice--do they claim $141.36 with receipts or $100 without. We hope they choose $141.36. Insert $141.36 on Line 47.

26. Add Line 47 and Line 51 together, place the amount on Line 61, move the amount over as indicated by the arrow and subtract Line 61 from Line 46. Place the difference on Line 62.

27. Remove the transparency for page 48 from the overhead and place the transparency for page 50 on the overhead.

28. Insert the amount of $6184.40 in the middle box on the top line of page 50.

29. Ask the students to turn to page 20 of their workbook and look for the amount of tax for $6184.40. Put this page on the overhead and indicate now it is done.

30. Place the amount shown in pink on the lines indicated on page 50.

31. Turn back to page 20 of the workbook and look for the Provincial Tax Payable and place this amount on Line 67.

32. Add Line 67 to the Net Federal Tax Payable and place the amount on Line 70. Remind the students that the government wants both the Net Federal Tax Payable and the Manitoba Tax Payable so they NEVER SUBTRACT the two.

33. Ask the students to insert BOX "G" on the Line 71. Then look up the amount that is shown in Box G of the T-4 slip. Insert this amount on Line 71.

34. Now remove the transparency for page 50 from the overhead and replace it with the transparency of the Manitoba Government Tax Credit Programs, page 105.

35. Ask the students to add up the amounts on Line 45, 53 and 54 and then multiply that amount by 3% (write on the form--$3170 x 3%) place the amount of $95.10 on Line (A).

36. Place zero on Line (B) and add Line (A) and Line (B) together and place $95.10 on the Line (C).

37. Ask the students to look at Line 41 of their return and insert $9788.06 on Lines 1 and 3. Multiply that amount by 1% ($9788.06 x 1% = $97.88). Place that amount below $95.10 and subtract the two numbers. Place the difference on Line (D).

38. Place a line through the Manitoba Property Tax Credit because the students are living at home and are not eligible for this. Enter 0 on Line (G), add Line (D) to (G) and place the result on Line (H).

39. Enter $0 as the Manitoba Cost of Living Tax Credit. Insert the amount on Line 74 on page 50 of the return. Replace the transparency for page 105 on the overhead.

40. Ask the student to sign the Buff form at the bottom. HOWEVER, remind them that if they are working for someone else, they would leave this blank.

41. Remove the Manitoba Tax Credit transparency and replace it with the transparency for page 50.

42. Add Line 71 to Line 74 and place $1150.00 in the Total Credits box. Move the amount over and subtract it from Line 70. Enter the difference of $47.10 as indicated in three places.

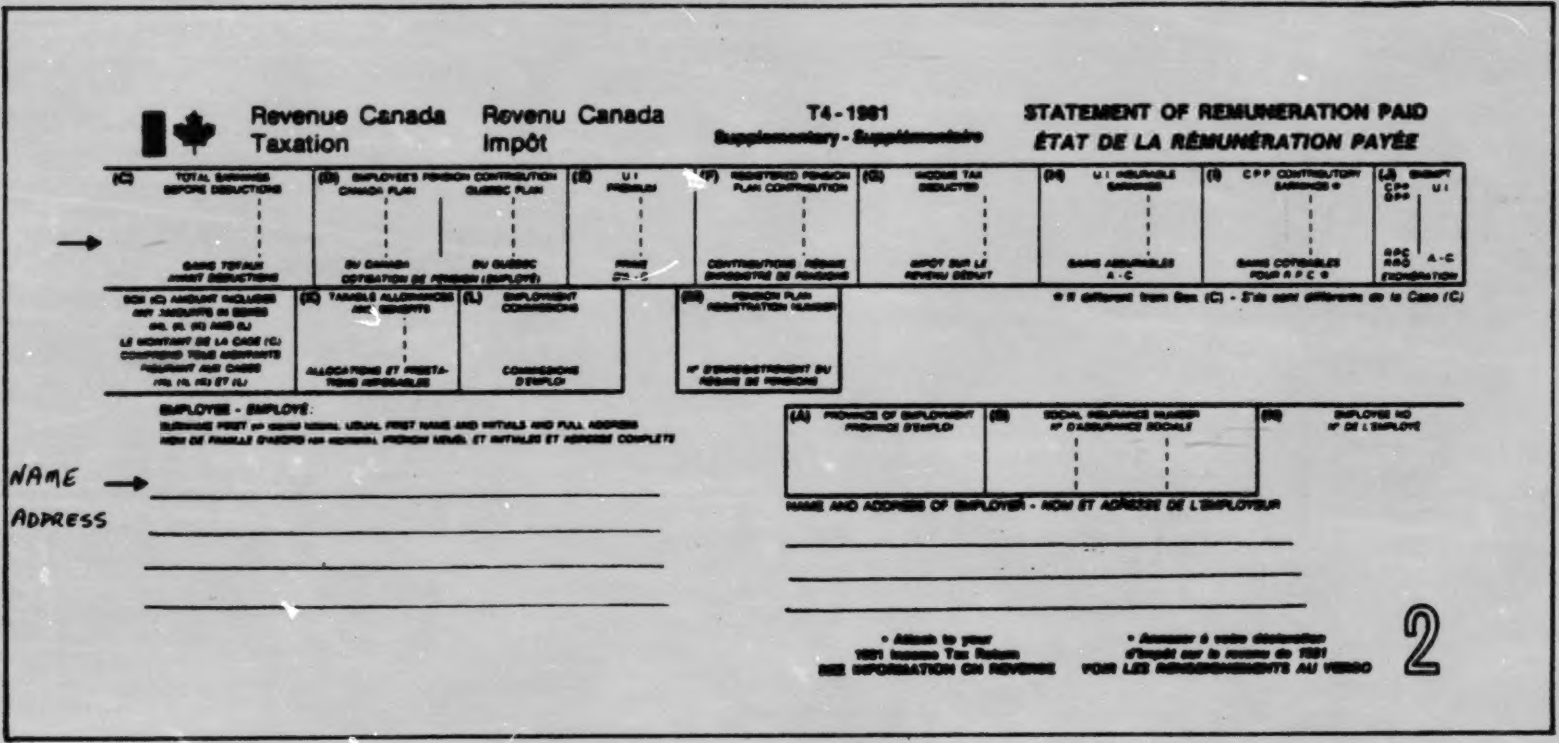
43. Sign, date and insert the phone number at the bottom of the form.

Note: The students do not sign the form when they prepare tax forms for other people in the assignments. They must fill in the box on the left side.

44. Staple the T-4 form to page 47. Staple page 91 and 105 to page 49 and the form is finished.

45. Assign Exercises Nos. 1, 1A, 2 and 2A.

SAMPLE "A"



Revenue Canada
Taxation

Revenu Canada
Impôt

T4-1981
Supplementary - Supplémentaire

STATEMENT OF REMUNERATION PAID
ÉTAT DE LA RÉMUNÉRATION PAYÉE

(C) TOTAL EARNINGS BEFORE DEDUCTIONS	(D) EMPLOYEE'S PENSION CONTRIBUTION CANADA PLAN QUEBEC PLAN	(E) U I PREMIUM	(F) REGISTERED PENSION PLAN CONTRIBUTION	(G) INCOME TAX DEDUCTED	(H) U I INSURABLE EARNINGS	(I) C P P CONTRIBUTORY EARNINGS *	(J) EXEMPT C P P Q P P U I

* If different from Box (C) - S'ils sont différents de la Case (C)

BOX (C) AMOUNT INCLUDES ANY AMOUNTS IN BOXES	(K) TAXABLE ALLOWANCES AND BENEFITS	(L) EMPLOYMENT COMMISSIONS	PENSION PLAN REGISTRATION NUMBER

EMPLOYEE - EMPLOYÉ:

NAME →
ADDRESS

(A) PROVINCE OF EMPLOYMENT	(B) SOCIAL INSURANCE NUMBER	EMPLOYEE NO

NAME AND ADDRESS OF EMPLOYER - NOM ET ADRESSE DE L'EMPLOYEUR

- Attach to your 1981 Income Tax Return
SEE INFORMATION ON REVERSE

2

D

You also received $____________ for Bank interest from the Bank of Montreal.

In addition, you paid the following:

Union Dues $ ______________ Safety Deposit Box Rental $ ____________

Dentist Bills $ ____________ Muscular Dystrophy $ ___________

University of Manitoba tuition fees for one course $ ______________

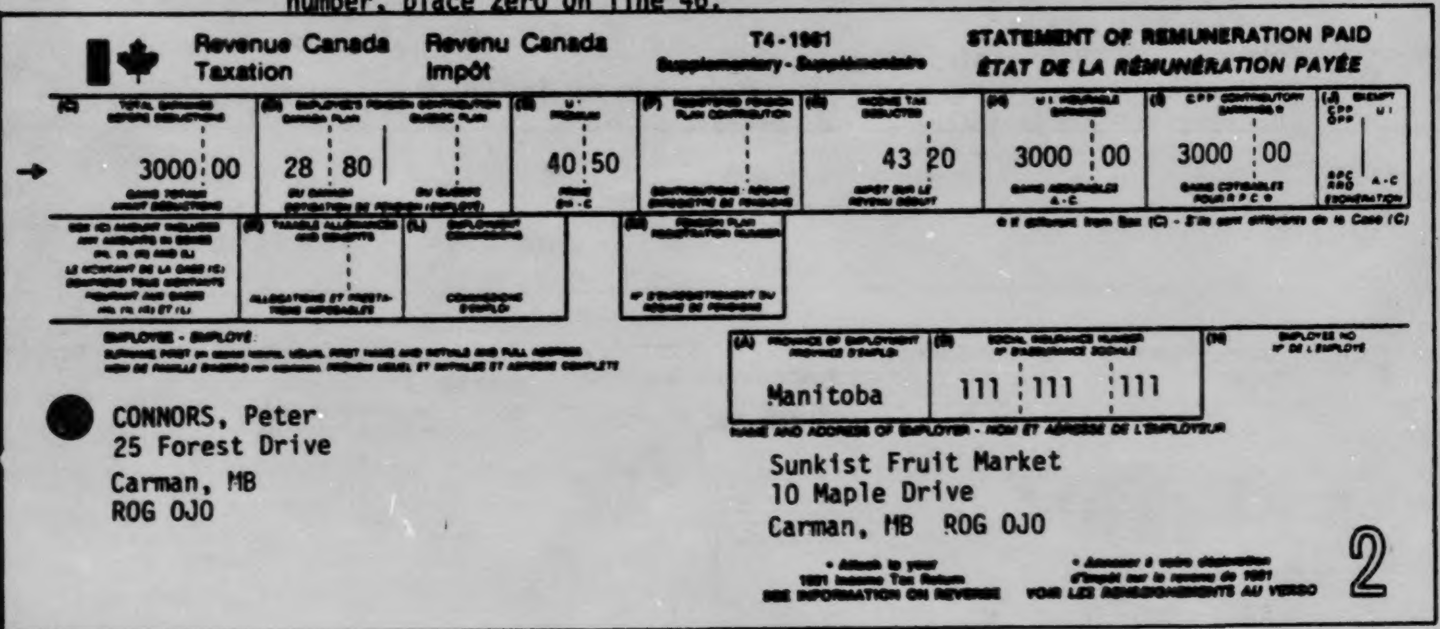
Exercise No. 1

Peter Connors is a secondary school student who lives at 25 Forest Drive, Carman, MB. He was born December 23, 1962.

Peter works part-time at a local supermarket. Last year he earned $3,000.

Complete Peter's income tax return.

Note: If Line 45 is greater than Line 41, and the difference is a negative number, place zero on line 46.



Revenue Canada Taxation / Revenu Canada Impôt

T4-1981 Supplementary - Supplémentaire

STATEMENT OF REMUNERATION PAID
ÉTAT DE LA RÉMUNÉRATION PAYÉE

(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
3000 00	28 80	40 50		43 20	3000 00	3000 00	

EMPLOYEE - EMPLOYÉ

(A)	(B)	(N)
Manitoba	111 111 111	

CONNORS, Peter
25 Forest Drive
Carman, MB
ROG OJO

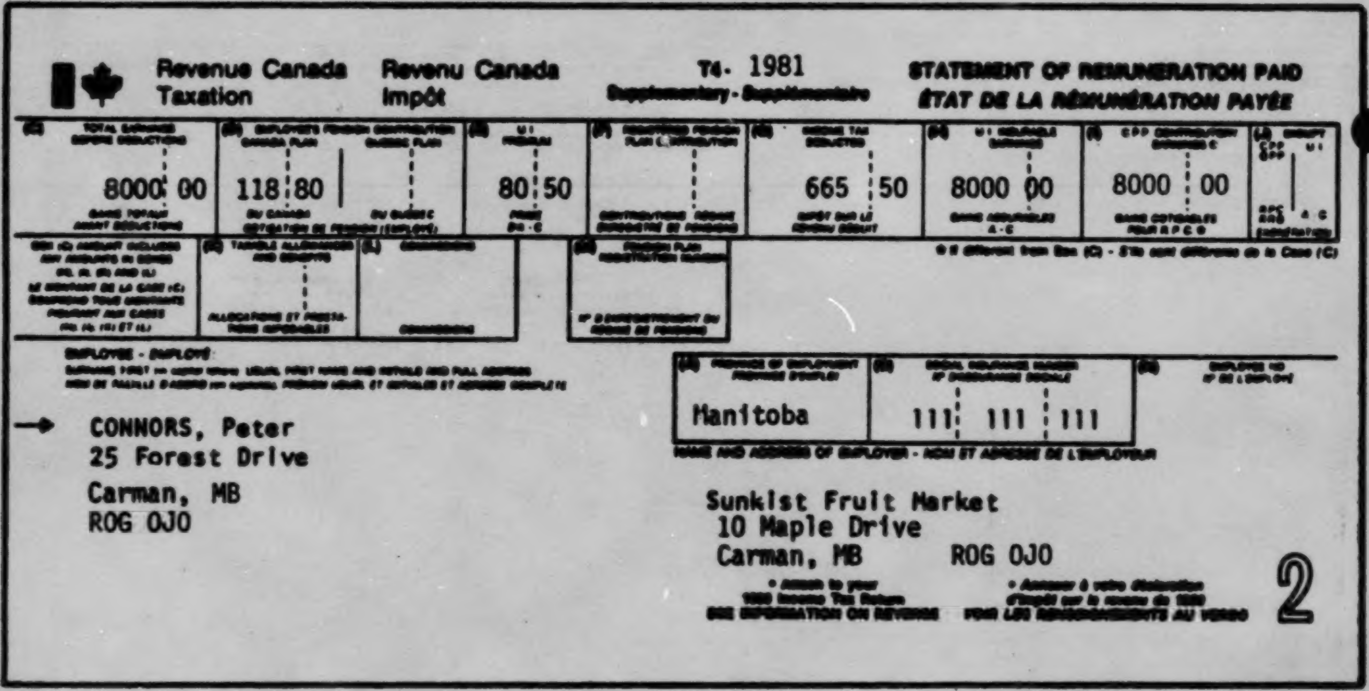
NAME AND ADDRESS OF EMPLOYER - NOM ET ADRESSE DE L'EMPLOYEUR

Sunkist Fruit Market
10 Maple Drive
Carman, MB ROG OJO

2

Exercise No. 1 -A

Peter Connors is a secondary school student who lives at 25 Forest Drive, Carman, MB. He was born December 23, 1962.
He paid $39.00 for Union dues
Peter works part-time at a local supermarket. Last year he earned $8,000.00
He received $50 in interest from the Bank of Montreal.
Complete Peter's income tax return.



Revenue Canada Taxation | Revenu Canada Impôt

T4- 1981

STATEMENT OF REMUNERATION PAID
ÉTAT DE LA RÉMUNÉRATION PAYÉE

8000 00	118 80	80 50		665 50	8000 00	8000 00

→ CONNORS, Peter
25 Forest Drive
Carman, MB
ROG OJO

Manitoba	111 111 111

Sunkist Fruit Market
10 Maple Drive
Carman, MB ROG OJO

2

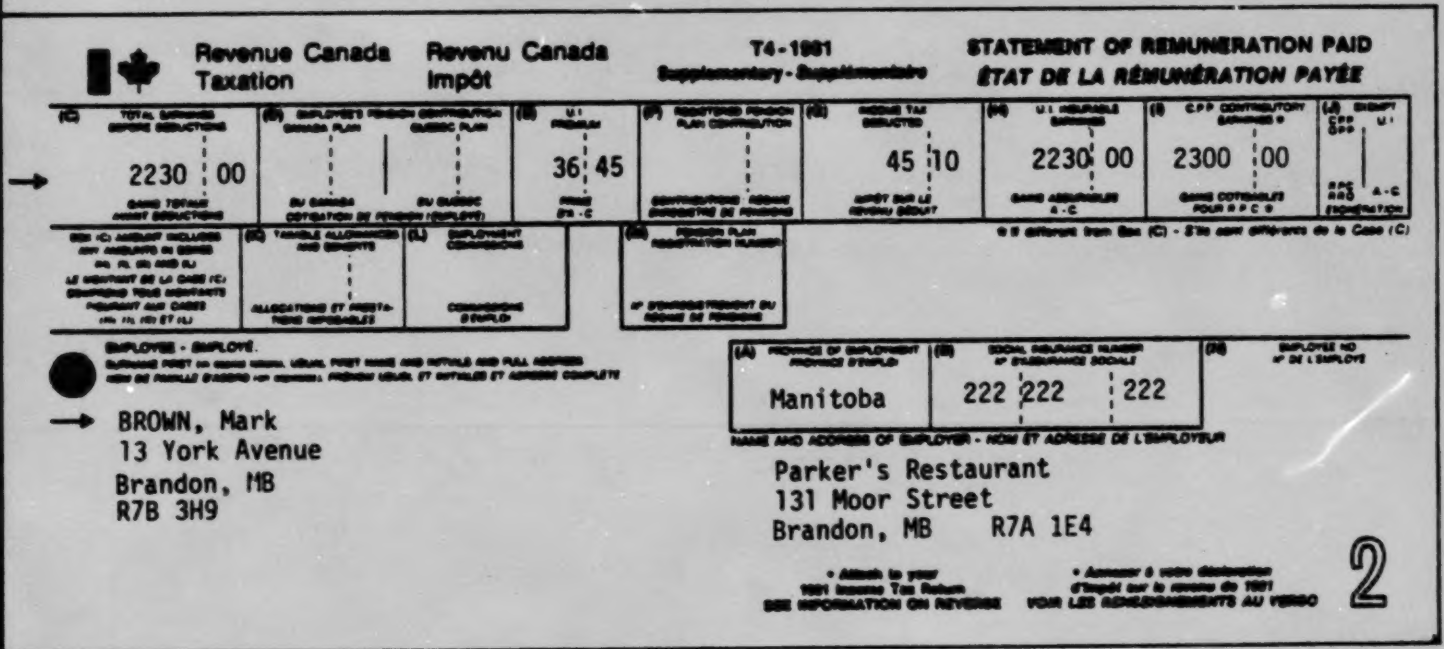
Exercise No. 2

Mark Brown worked as a waiter last summer and earned $2,230 in salary and $350 in tips. He took an evening course at Assiniboine Community College and paid $20.00 in tuition fees.

Mark was born September 14, 1965. He lives at 13 York Ave.

Complete Mark's income tax return.

Note: Enter the amount of tips on Line 3. Add Line 3 to Line 2 and place the total on Line 4.



Revenue Canada Taxation — Revenu Canada Impôt

T4-1981
Supplementary - Supplémentaire

STATEMENT OF REMUNERATION PAID
ÉTAT DE LA RÉMUNÉRATION PAYÉE

(C) TOTAL EARNINGS BEFORE DEDUCTIONS / GAINS TOTAUX AVANT DÉDUCTIONS	(D) EMPLOYEE'S PENSION CONTRIBUTION – CANADA PLAN / DU CANADA – QUEBEC PLAN / DU QUÉBEC – COTISATION DE PENSION (EMPLOYÉ)	(E) U.I. PREMIUM / PRIME D'A-C	(F) REGISTERED PENSION PLAN CONTRIBUTION / CONTRIBUTIONS RÉGIME ENREGISTRÉ DE PENSIONS	(G) INCOME TAX DEDUCTED / IMPÔT SUR LE REVENU DÉDUIT	(H) U.I. INSURABLE EARNINGS / GAINS ASSURABLES A-C	(I) C.P.P. CONTRIBUTORY EARNINGS * / GAINS COTISABLES POUR R.P.C. *	(J) EXEMPT CPP QPP U.I. / RPC RRQ A-C (EXONÉRATION)
2230 00		36 45		45 10	2230 00	2300 00	

* If different from Box (C) - S'ils sont différents de la Case (C)

BOX (C) AMOUNT INCLUDES ANY AMOUNTS IN BOXES (K), (L), (M) AND (L) / LE MONTANT DE LA CASE (C) COMPREND TOUS MONTANTS FIGURANT AUX CASES (K), (L), (M) ET (L)	(K) TAXABLE ALLOWANCES AND BENEFITS / ALLOCATIONS ET PRESTATIONS IMPOSABLES	(L) EMPLOYMENT COMMISSIONS / COMMISSIONS D'EMPLOI	(M) PENSION PLAN REGISTRATION NUMBER / Nº D'ENREGISTREMENT DU RÉGIME DE PENSIONS

EMPLOYEE - EMPLOYÉ.
SURNAME FIRST (in capital letters), USUAL FIRST NAME AND INITIALS AND FULL ADDRESS
NOM DE FAMILLE D'ABORD (en majuscules), PRÉNOM USUEL ET INITIALES ET ADRESSE COMPLÈTE

BROWN, Mark
13 York Avenue
Brandon, MB
R7B 3H9

(A) PROVINCE OF EMPLOYMENT / PROVINCE D'EMPLOI	(B) SOCIAL INSURANCE NUMBER / Nº D'ASSURANCE SOCIALE	(24) EMPLOYEE NO. / Nº DE L'EMPLOYÉ
Manitoba	222 222 222	

NAME AND ADDRESS OF EMPLOYER - NOM ET ADRESSE DE L'EMPLOYEUR

Parker's Restaurant
131 Moor Street
Brandon, MB R7A 1E4

• Attach to your 1981 Income Tax Return
SEE INFORMATION ON REVERSE

• Annexer à votre déclaration d'impôt sur le revenu de 1981
VOIR LES RENSEIGNEMENTS AU VERSO

2

*NOTE: Persons under 18 not subject to C.P.P. Contributions.

Exercise No. 2 - A

Mark Brown worked as a waiter last summer and earned $9500, plus $400 tips. He took an evening course at Assiniboine Community College and paid $75.00 in tuition fees.

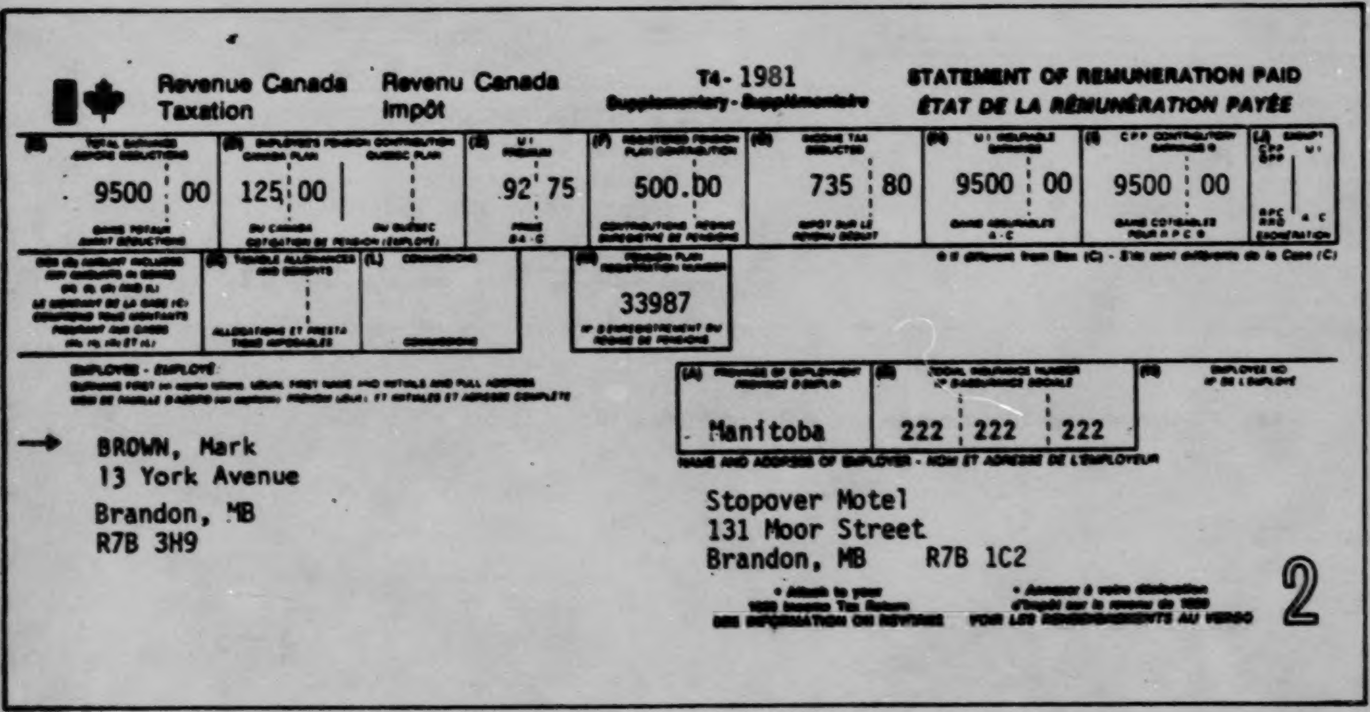
Mark received $75.00 in interest from the Bank of Nova Scotia.

Mark was born September 14, 1961 He lives at 13 York Ave.

Mark has $800 in dental bills. He paid $13.00 for a safety deposit box.

Complete Mark's income tax return.

Note: Be sure to add the tips to the total earnings.



Revenue Canada Taxation
Revenu Canada Impôt

T4-1981
Supplementary - Supplémentaire

STATEMENT OF REMUNERATION PAID
ÉTAT DE LA RÉMUNÉRATION PAYÉE

(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
9500 00	125 00	92 75	500.00	735 80	9500 00	9500 00	

	(K)	(L)	(M)
			33987

EMPLOYEE - EMPLOYÉ

→ BROWN, Mark
13 York Avenue
Brandon, MB
R7B 3H9

(A)	(B)	(N)
Manitoba	222 222 222	

NAME AND ADDRESS OF EMPLOYER - NOM ET ADRESSE DE L'EMPLOYEUR

Stopover Motel
131 Moor Street
Brandon, MB R7B 1C2

SEE INFORMATION ON REVERSE
VOIR LES RENSEIGNEMENTS AU VERSO

2

C.1, C.2 1. Find the simple interest for each of the following cases:

	Principal	Rate	Time
a)	$ 530	15%	35 days
b)	$1600	16%	3 years
c)	$1200	17%	5 months
d)	$ 840	16%	40 days
e)	$7000	20%	2 years
f)	$6400	19%	1 year
g)	$ 440	16%	6 months
h)	$ 850	14%	200 days
i)	$ 500	17%	1/2 year
j)	$2100	18%	9 months

2. Find the missing item in each of the following:

	Interest	=	Principal	×	Rate	×	Time
a)	?		$1300		18%		2 months
b)	$180		$5000		18%		? days
c)	$340		?		17%		6 months
d)	$ 33.75		?		16%		25 days
e)	$240		$2000		? %		9 months
f)	?		$7000		18%		3 years
g)	$180		$3000		15%		? days
h)	$ 75		$ 500		20%		? months
i)	$ 72		$ 800		? %		6 months
j)	$128		?		16%		8 months

3. How many months will it take for a $2000 deposit to earn $120 interest at 18% per annum.

4. Find the simple interest on a loan of $500 at 17% per annum for 3 years.

5. Find how many years it will take for an investment of $1200 invested at 15% per annum to earn simple interest of $720.

6. What is the interest rate needed to earn $29.75 interest on a $700 loan on the first three months?

7. What principal will have interest charges of $130.00 for a period of 6 months at 20% per annum?

8. Frank Howard borrowed $8000 from a business associate. Four months later he repaid the loan and interest with a cheque for $8400. What rate of interest was he charged?

9. John Sterling borrowed $4000 from a bank for a short-term loan. He took out the loan September 21, and repaid it on October 11. If the interest paid amounted to $39.45, what percent rate of interest must John have paid?

10. Jayne Kennedy took out a personal loan for ten months in order to purchase a used vehicle. The interest rate was 15% per annum. If Jayne paid $268.75 in interest what must have been the amount of the loan?

C.3 1. Compounding annually, find the compound amount of:

a) $1000 for 2 years at 14%
b) $500 for 3 years at 10%
c) $2000 for 2 years at 15%
d) $600 for 4 years at 13%
e) $10 000 for 3 years at 20%

2. Compounding semi-annually, find the compound amount of:

a) $500 for 1 year at 18%
b) $3500 for 2 years at 20%

C.4 Use the compound interest tables that follow to answer the following questions. Note the tables give the compound amount of $1000. To find the compound amount of $1, simply move the decimal place three places to the left.

1. Compounding annually, find the compound amount of:

a) $385 for 3 years at 11.25%
b) $4250 for 5 years at 16.00%
c) $535 for 2 years at 17.75%
d) $1000 for 3 years at 18.50%
e) $2000 for 5 years at 16.75%
f) $1500 for 4 years at 18.25%
g) $3000 for 3 years at 17.00%
h) $3500 for 4 years at 16.50%
i) $1250 for 3 years at 16.25%
j) $1250 for 3 years at 18.75%

2. Compounding semi-annually, find the compound amount of:

a) $425 for 2 years at 11.75%
b) $350 for 3 years at 12.50%
c) $1000 for 1 year at 13.75%
d) $2000 for 4 years at 14.50%
e) $2500 for 5 years at 17.00%
f) $1960 for 3 years at 16.50%
g) $1450 for 4 years at 16.25%
h) $1780 for 2 years at 17.25%
i) $880 for 5 years at 18.50%
j) $1220 for 3 years at 16.75%

Growth of a $1,000.00 Investment with interest Compounded Yearly

ears	11%	11.25%	11.50%	11.75%	12.00%	12.25%	12.50%
1	1110.00	1112.50	1115.00	1117.50	1120.00	1122.50	1125.00
2	1232.10	1237.65	1243.22	1248.80	1254.40	1260.01	1265.63
3	1367.63	1376.89	1386.19	1395.54	1404.92	1414.36	1423.83
4	1518.07	1531.79	1545.60	1559.51	1573.51	1587.62	1601.81
5	1685.05	1704.12	1723.35	1742.76	1762.34	1782.10	1802.04

	12.75%	13.00%	13.25%	13.50%	13.75%	14.00%	14.25%
1	1127.50	1130.00	1132.50	1135.00	1137.50	1140.00	1142.50
2	1271.26	1276.90	1282.56	1288.23	1293.91	1299.60	1305.31
3	1433.35	1442.90	1452.50	1462.14	1471.82	1481.54	1491.32
4	1616.10	1630.48	1644.96	1659.53	1674.20	1688.96	1703.83
5	1822.15	1842.44	1862.92	1883.57	1904.40	1925.41	1946.63

	14.50%	14.75%	15.00%	15.25%	15.50%	15.75%	16.00%
1	1145.00	1147.50	1150.00	1152.50	1155.00	1157.50	1160.00
2	1311.03	1316.76	1322.50	1328.26	1334.02	1339.80	1345.60
3	1501.13	1510.98	1520.88	1530.82	1540.79	1550.82	1560.89
4	1718.79	1733.85	1749.01	1764.27	1779.62	1795.08	1810.63
5	1968.01	1989.59	2011.36	2033.32	2055.46	2077.80	2100.34

	16.25%	16.50%	16.75%	17.00%	17.25%	17.50%	17.75%
1	1162.50	1165.00	1167.50	1170.00	1172.50	1175.00	1177.50
2	1351.40	1357.22	1363.05	1368.90	1374.75	1380.62	1386.50
3	1571.00	1581.16	1591.36	1601.61	1611.90	1622.23	1632.61
4	1826.29	1842.05	1857.92	1873.88	1889.95	1906.12	1922.39
5	2123.07	2145.99	2169.12	2192.44	2215.97	2239.69	2263.62

	18.00%	18.25%	18.50%	18.75%	19.00%
1	1180.00	1182.50	1185.00	1187.50	1190.00
2	1392.40	1398.30	1404.22	1410.15	1416.10
3	1643.03	1653.49	1664.00	1674.56	1685.15
4	1938.77	1955.26	1971.84	1988.54	2005.33
5	2287.75	2312.09	2336.63	2361.39	2386.35

Source: Inland Trust
1080 Portage Avenue
Winnipeg, Manitoba

GROWTH OF A $1,000.00 INVESTMENT WITH INTEREST COMPOUNDED HALF - YEARLY

YEARS	11.00%	11.25%	11.50%	11.75%	12.00%	12.25%	12.50%
1	1113.03	1115.66	1118.31	1120.95	1123.60	1126.25	1128.91
2	1238.83	1244.71	1250.61	1256.53	1262.48	1268.44	1274.44
3	1378.84	1388.67	1398.56	1408.51	1418.52	1428.58	1438.72
4	1534.69	1549.29	1564.02	1578.87	1593.85	1608.94	1624.18
5	1708.14	1728.49	1749.06	1769.84	1790.85	1812.07	1833.55

	12.75%	13.00%	13.25%	13.50%	13.75%	14.00%	14.25%
1	1131.56	1134.23	1136.89	1139.56	1142.23	1144.90	1147.57
2	1280.44	1286.47	1292.52	1298.59	1304.68	1310.80	1316.93
3	1448.90	1459.15	1469.45	1479.81	1490.25	1500.73	1511.28
4	1639.53	1655.00	1670.60	1686.33	1702.19	1718.19	1734.30
5	1855.23	1877.15	1899.29	1921.67	1944.29	1967.15	1990.25

	14.50%	14.75%	15.00%	15.25%	15.50%	15.75%	16.00%
1	1150.25	1152.93	1155.62	1158.31	1161.00	1163.70	1166.40
2	1323.08	1329.26	1335.46	1341.69	1347.93	1354.20	1360.48
3	1521.89	1532.56	1543.30	1554.10	1564.96	1575.88	1586.87
4	1750.56	1766.95	1783.47	1800.13	1816.93	1833.86	1850.93
5	2013.60	2037.19	2061.03	2085.12	2109.46	2134.06	2158.92

	16.25%	16.50%	16.75	17.00%	17.25%	17.50%	17.75%
1	1169.10	1171.80	1174.51	1177.22	1179.93	1182.65	1185.37
2	1366.79	1373.12	1379.48	1385.85	1392.25	1398.67	1405.11
3	1597.92	1609.04	1620.22	1631.46	1642.77	1654.15	1665.59
4	1868.13	1885.48	1902.97	1920.60	1938.37	1956.29	1974.35
5	2184.04	2209.42	2235.07	2260.98	2287.16	2313.62	2340.35

	18.00%	18.25%	18.50%	18.75%	19.00%
1	1188.10	1190.82	1193.55	1196.28	1199.02
2	1411.58	1418.06	1424.57	1431.10	1437.66
3	1677.10	1688.67	1700.31	1712.01	1723.79
4	1992.56	2010.91	2029.41	2048.06	2066.86
5	2367.36	2394.65	2422.22	2450.08	2478.22

Source: Inland Trust
1080 Portage Avenue
Winnipeg, Manitoba

D.I
Sheet I

1. Calculate the installment price of each item and the carrying charge of each purchase:

	Cash Selling Price	Down Payment	Monthly Payment	Months	Installment Price	Carrying Charge
a)	$ 60.20	$ 15.00	$ 7.50	8		
b)	$135.99	$ 20.00	$25.00	6		
c)	$838.79	$100.00	$40.00	24		
d)	$149.99	$ 25.00	$18.00	8		
e)	$225.49	$ 40.00	$19.00	12		

2. A color TV has a cash price of $999.99. The installment terms are $200.00 down and $37.00 a month for twenty-four months. What is the installment price of the TV? Calculate the carrying charge.

3. A sofa and chair have a cash price of $649.99. The installment terms are $150 down and $50 a month for twelve months. What is the installment price of the furniture? Calculate the carrying charge.

4. A stereo system has a cash price of $1250.00. The installment terms are $225 down and $75 a month for sixteen months. What is the installment price of the stereo? Calculate the carrying charge.

D.I
Sheet 2

1. Calculate the installment price of each item, the carrying charge of each item and the percent rate by which the installment price exceeds the cash price.

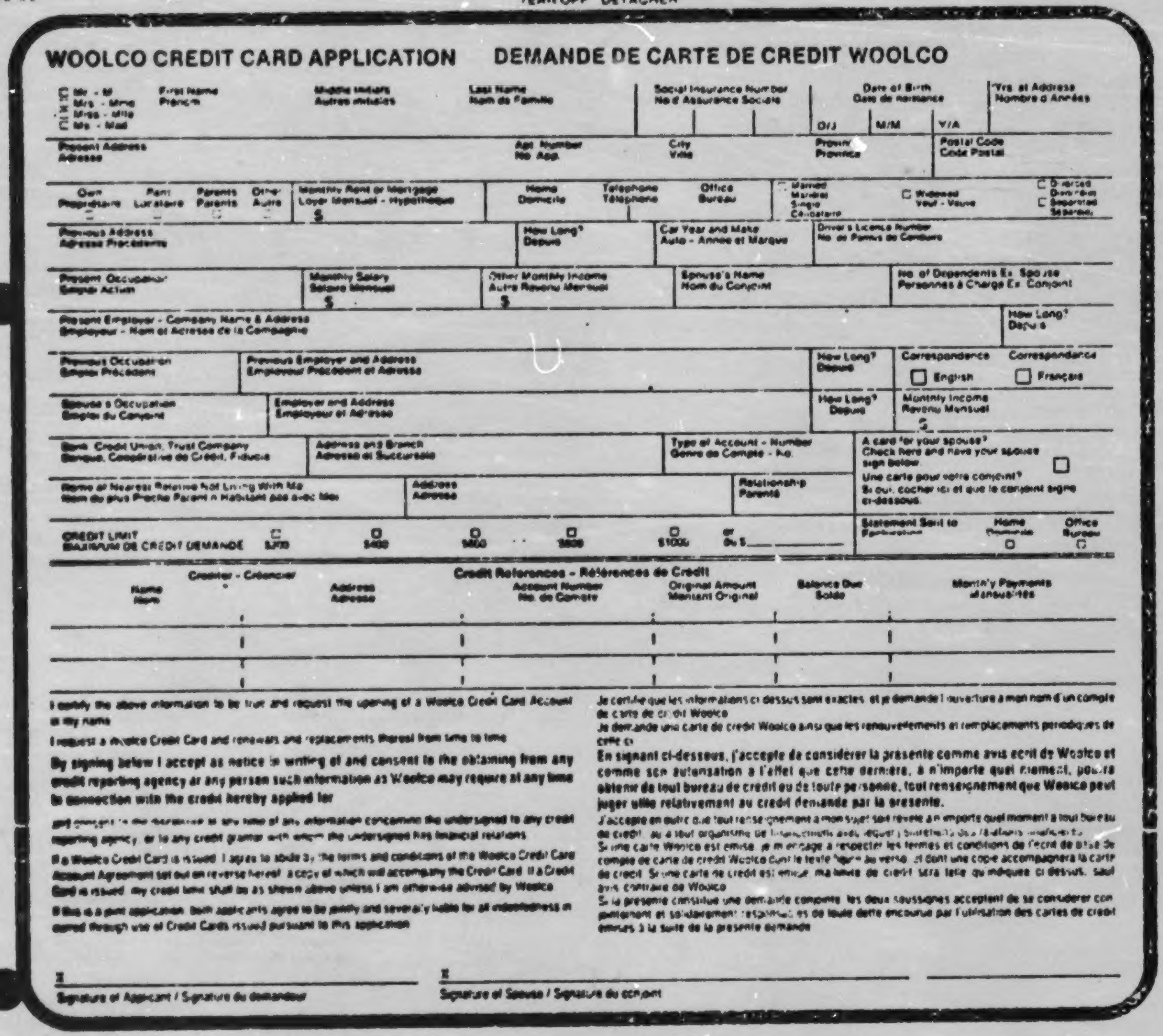
	Cash Selling Price	Down Payment	Monthly Payment	Months	Inatall-ment Price	Carrying Charge	Percent Rate Excess
a)	$ 35.49	$ 8.00	$ 7.00	6			
b)	$101.38	$ 12.50	$11.00	9			
c)	$989.99	$150.00	$55.00	18			
d)	$ 74.99	$ 15.00	$10.00	7			
e)	$ 98.99	$ 20.00	$15.00	6			
f)	$686.49	$100.00	$60.00	12			
g)	$149.99	$ 25.00	$13.00	12			

2. Mrs. Garrvey can purchase a clock radio for $39.90 cash, or she can pay $5.00 down and $4.50 a month for 9 months. By what percent rate does the installment price exceed the cash price?

3. An area rug can be purchased for $349.99 cash or by purchasing on the installment plan for $75.00 down and $28.00 a month for 12 months. What is the installment price of the rug? What is the carrying charge? By what percent rate does the installment price exceed the cash price?

D.2 CREDIT CARDS. Application Form

TEAR OFF DETACHER



WOOLCO CREDIT CARD APPLICATION **DEMANDE DE CARTE DE CREDIT WOOLCO**

☐ Mr - M
☐ Mrs - Mme
☐ Miss - Mlle
☐ Ms - Mad
First Name / Prénom
Middle Initials / Autres initiales
Last Name / Nom de Famille
Social Insurance Number / No d'Assurance Sociale
Date of Birth / Date de naissance D/J M/M Y/A
Yrs. at Address / Nombre d'Années
Present Address / Adresse
Apt. Number / No. App.
City / Ville
Province / Province
Postal Code / Code Postal
Own / Propriétaire ☐ Rent / Locataire ☐ Parents / Parents ☐ Other / Autre ☐
Monthly Rent or Mortgage / Loyer Mensuel - Hypothèque $
Home / Domicile Telephone / Téléphone Office / Bureau
☐ Married / Marié(e) Single / Célibataire ☐ Widowed / Veuf - Veuve ☐ Divorced / Divorcé(e) ☐ Separated / Séparé(e)
Previous Address / Adresse Précédente
How Long? / Depuis
Car Year and Make / Auto - Année et Marque
Driver's Licence Number / No. de Permis de Conduire
Present Occupation / Emploi Actuel
Monthly Salary / Salaire Mensuel $
Other Monthly Income / Autre Revenu Mensuel $
Spouse's Name / Nom du Conjoint
No. of Dependents Ex. Spouse / Personnes à Charge Ex. Conjoint
Present Employer - Company Name & Address / Employeur - Nom et Adresse de la Compagnie
How Long? / Depuis
Previous Occupation / Emploi Précédent
Previous Employer and Address / Employeur Précédent et Adresse
How Long? / Depuis
Correspondence ☐ English Correspondance ☐ Français
Spouse's Occupation / Emploi du Conjoint
Employer and Address / Employeur et Adresse
How Long? / Depuis
Monthly Income / Revenu Mensuel $
Bank, Credit Union, Trust Company / Banque, Coopérative de Crédit, Fiducie
Address and Branch / Adresse et Succursale
Type of Account - Number / Genre de Compte - No.
A card for your spouse? Check here and have your spouse sign below. ☐
Une carte pour votre conjoint? Si oui, cocher ici et que le conjoint signe ci-dessous.
Name of Nearest Relative Not Living With Me / Nom du plus Proche Parent n'Habitant pas avec Moi
Address / Adresse
Relationship / Parenté
CREDIT LIMIT / MAXIMUM DE CREDIT DEMANDE ☐ $200 ☐ $400 ☐ $600 ☐ $800 ☐ $1000 or / ou $______
Statement Sent to / [illegible] Home / Domicile ☐ Office / Bureau ☐

Credit References - Références de Crédit

Creditor - Créancier Name / Nom	Address / Adresse	Account Number / No. de Compte	Original Amount / Montant Original	Balance Due / Solde	Monthly Payments / Mensualités

I certify the above information to be true and request the opening of a Woolco Credit Card Account in my name.

I request a Woolco Credit Card and renewals and replacements thereof from time to time.

By signing below I accept as notice in writing of and consent to the obtaining from any credit reporting agency or any person such information as Woolco may require at any time in connection with the credit hereby applied for

and consent to the disclosure at any time of any information concerning the undersigned to any credit reporting agency, or to any credit grantor with whom the undersigned has financial relations.

If a Woolco Credit Card is issued, I agree to abide by the terms and conditions of the Woolco Credit Card Account Agreement set out on reverse hereof, a copy of which will accompany the Credit Card. If a Credit Card is issued, my credit limit shall be as shown above unless I am otherwise advised by Woolco.

If this is a joint application, both applicants agree to be jointly and severally liable for all indebtedness incurred through use of Credit Cards issued pursuant to this application.

Je certifie que les informations ci-dessus sont exactes, et je demande l'ouverture à mon nom d'un compte de carte de crédit Woolco.

Je demande une carte de crédit Woolco ainsi que les renouvellements et remplacements périodiques de celle-ci.

En signant ci-dessous, j'accepte de considérer la présente comme avis écrit de Woolco et comme son autorisation à l'effet que cette dernière, à n'importe quel moment, pourra obtenir de tout bureau de crédit ou de toute personne, tout renseignement que Woolco peut juger utile relativement au crédit demandé par la présente.

J'accepte en outre que tout renseignement à mon sujet soit révélé à n'importe quel moment à tout bureau de crédit, ou à tout organisme de [illegible]

Si une carte Woolco est émise, je m'engage à respecter les termes et conditions de l'écrit de base de compte de carte de crédit Woolco dont le texte figure au verso, et dont une copie accompagnera la carte de crédit. Si une carte de crédit est émise, ma limite de crédit sera telle qu'indiquée ci-dessus, sauf avis contraire de Woolco.

Si la présente constitue une demande conjointe, les deux soussignés acceptent de se considérer conjointement et solidairement responsables de toute dette encourue par l'utilisation des cartes de crédit émises à la suite de la présente demande.

X ______________________
Signature of Applicant / Signature du demandeur

X ______________________
Signature of Spouse / Signature du conjoint

D.2,a,b 1. What annual rate of interest is equal to a rate of 2% per month?

2. A credit card has a monthly rate of interest of 1-3/4%, what is the annual rate of interest?

3. If the interest rate is 1-1/2% per month, what is the yearly interest rate?

4. Jack Smith has a previous balance of $325 on his charge card. Find the amount of interest he will be charged for the month if interest is calculated at the rate of 1.75% per month.

5. On a particular credit card, interest is 2.0% per month. If Avis Carnes has a previous balance of $595.98 with no new purchases, what is her interest charge?

6. Alex has a credit card balance of $298.50. His credit card company charges 1.95% interest on the balance. Find his monthly interest.

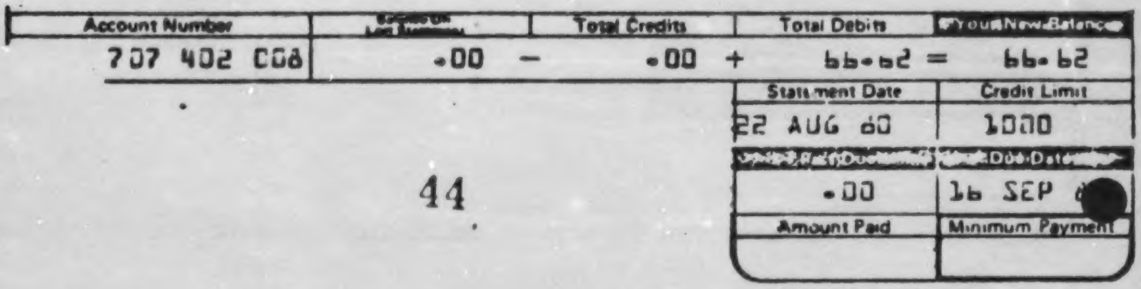
Note: Some companies charge interest on the full previous balance if at least half of that balance is not paid during the current billing period. There is no service charge if half or more is paid. Use these rules to answer questions 7 and 8.

7. Last month's credit card balance was $550. A payment of $250 was made during the month. The interest rate is 1.8% per month. Find the interest charge if any on the credit card statement.

8. The previous balance on a credit card statement is $351.75. A payment of $180 was made. What interest charge if any is on the statement?

D.2,c 1. Leah Spinner had a previous balance of $600 on her credit card statement. Interest was calculated on this balance at the rate of 1.75% per month. What would be her minimum monthly payment if it must correspond to at least 5% of the ending balance, or $10, whichever is greater?

2. Below is part of a credit card statement. The minimum payment required is the greater of $10 or 5% of "Your New Balance". Find the minimum payment.



Account Number	[illegible]		Total Credits		Total Debits		Your New Balance
707 402 008	.00	−	.00	+	66.62	=	66.62

Statement Date	Credit Limit
22 AUG 80	1000

[illegible]	[illegible] Due Date
.00	16 SEP
Amount Paid	Minimum Payment

3. The interest rate on a charge card is 2.1% per month. The previous balance was $715.05. Find the minimum payment required if it must be the greater of $10 or 5% of the ending balance.

4. An ABC Department Store card holder must make a payment of at least $10 if the balance shown on the monthly statement is $200.00 or less and of at least 5% of said balance if it is over $200.00. Cardholder shall pay a credit charge calculated on the outstanding balance at a credit rate of 1.95% per month (23.4% per annum). NOTE: Outstanding balance = Previous balance. Calculate the minimum payment for each of these.

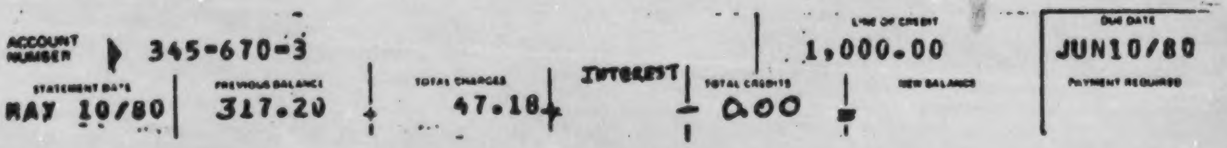
   a) Outstanding balance of $175.00.
   b) Outstanding balance of $320.76.

D.2,d 1. The minimum monthly payment in these problems is the greater of $10 or 5% of the ending balance. Find the minimum payment.

	Previous Balance	Interest Rate	Purchases
a)	$162.05	1.75%	$ 29.30
b)	$298.60	2.0%	$100.00
c)	$ 97.27	1.95%	$ 25.25
d)	$541.36	1.8%	$ 37.38
e)	$724.27	2.1%	$126.29

2. Bernie Ruff had a previous balance of $375 on his credit card statement. Interest was calculated on this balance at the rate of 18% per year. During the month he made purchases totalling $125. What would his minimum monthly payment be if it must correspond to at least 5% of the ending balance or $10, whichever is greater?

3. Below is part of a credit card statement. The interest is 1.9% per month. The minimum payment must be $15 or 6% of the ending balance, whichever is greater. Fill in the interest, new balance, and minimum payment.



ACCOUNT NUMBER	345-670-3				LINE OF CREDIT	1,000.00	DUE DATE JUN10/80
STATEMENT DATE MAY 10/80	PREVIOUS BALANCE 317.20	+	TOTAL CHARGES 47.18	+ INTEREST −	TOTAL CREDITS 0.00	= NEW BALANCE	PAYMENT REQUIRED

4. Alan Beach had a previous balance of $298.97 on his credit card statement. Interest charges were 21% per annum. During the last month he had made purchases totalling $205.93. Find his minimum payment if it must be at least $10, if the balance on the monthly statement is $200.00 or less and if at least 5% of said statement balance if it is over $200.00.

5. The minimum payment required by the Zelcon Store is $10 if the balance shown on the monthly statement is $200.00 or less and of at least 5% of said balance if it is over $200.00. A card holder receives her statement showing a previous balance of $86.35 and a purchase of $26.41. Find the minimum payment if the credit charge is 2.1% based on the previous balance.

D.2,e 1. In this problem interest should be calculated on the unpaid balance. The minimum payment must be at least 5% of the ending balance, or $10, whichever is greater. Fill in the table.

	Previous Balance	Payment	Unpaid Balance	Int. Rate	Interest	Purchases	Ending Balance	Minimum Payment
a)	$ 97.76	$ 40.00		1.75%		$ 21.76		
b)	$220.57	$100.00		2.0%		$ 89.48		
c)	$359.98	$ 75.00		1.95%		$139.29		
d)	$163.51	$ 50.00		1.8%		$ 77.37		

2. Audrey McDole had a previous balance of $419.91 on her credit card statement. Audrey made a payment of $250.00 during the month. Interest is calculated on the unpaid balance at the rate of 2% per month. During the month, Audrey made purchases totalling $189. What would be her minimum monthly payment if it must correspond to at least 5% of the ending balance, or $10, whichever is greater?

3. The Fairprice Department Store calculates interest and minimum payments in the following way. Cardholder shall pay the amount of all purchases on the account and credit charges thereon as provided, within 25 days from the monthly statement date either (I) in full, in which case no credit charges will be payable except, if applicable, on previous statement balances outstanding or (II) by an instalment payment of at least $10 if the balance shown on the monthly statement is $200.00 or less and of at least 5% of said balance if it is over $200.00. Cardholder shall pay a credit charge calculated on the oustanding balance at a credit rate of 1.95% per month (23.4% per annum). NOTE: Outstanding balance = previous balance. Using this system, answer the following:

a) Complete the following portion of a credit card statement.

Previous balance	Purchases	Cash advances	Total interest	Payments	Returns	New balance
349.27 +	120.00 +	0.00 +	−	75.00 −	0.00 =	

Min. payment

b) Find the minimum payment that has to be made if the outstanding balance was $175.00 and purchases were $27.95.

c) Find the minimum payment if the outstanding balance was $298.76; purchases $86.31; and the payment was $63.50.

d) Find the minimum payment if the outstanding balance was $198.70; purchases $75.00; and a payment of $175.00 was submitted.

48

15%

15
MONTHLY PAYMENT
REQUIRED TO AMORTIZE A LOAN

TERM AMOUNT	1 YEAR	2 YEARS	3 YEARS	4 YEARS	5 YEARS	6 YEARS	7 YEARS	8 YEARS	9 YEARS	10 YEARS	11 YEARS	12 YEARS	13 YEARS	14 YEARS	15 YEARS
100	9.01	4.83	3.45	2.77	2.36	2.10	1.91	1.77	1.67	1.59	1.53	1.48	1.44	1.40	1.37
200	18.01	9.66	6.89	5.53	4.72	4.19	3.81	3.54	3.34	3.18	3.05	2.95	2.87	2.80	2.74
300	27.02	14.49	10.34	8.29	7.07	6.28	5.72	5.31	5.00	4.76	4.57	4.42	4.30	4.20	4.11
400	36.02	19.31	13.78	11.05	9.43	8.37	7.62	7.08	6.67	6.35	6.10	5.89	5.73	5.59	5.48
500	45.03	24.14	17.23	13.81	11.78	10.46	9.53	8.85	8.33	7.94	7.62	7.37	7.16	6.99	6.85
600	54.03	28.97	20.67	16.57	14.14	12.55	11.43	10.62	10.00	9.52	9.14	8.84	8.59	8.39	8.22
700	63.04	33.80	24.12	19.33	16.49	14.64	13.34	12.39	11.67	11.11	10.67	10.31	10.02	9.78	9.59
800	72.04	38.62	27.56	22.09	18.85	16.73	15.24	14.15	13.33	12.69	12.19	11.78	11.45	11.18	10.96
900	81.05	43.45	31.01	24.85	21.20	18.82	17.15	15.92	15.00	14.28	13.71	13.25	12.88	12.58	12.33
1000	90.05	48.28	34.45	27.61	23.56	20.91	19.05	17.69	16.66	15.87	15.23	14.73	14.31	13.98	13.70
2000	180.10	96.55	68.90	55.21	47.12	41.81	38.10	35.38	33.32	31.73	30.46	29.45	28.62	27.95	27.39
3000	270.15	144.83	103.34	82.82	70.67	62.71	57.14	53.07	49.98	47.59	45.69	44.17	42.93	41.92	41.08
4000	360.19	193.10	137.79	110.42	94.23	83.61	76.19	70.75	66.64	63.45	60.92	58.89	57.24	55.89	54.77
5000	450.24	241.37	172.24	138.03	117.78	104.52	95.24	88.44	83.30	79.31	76.15	73.61	71.55	69.86	68.46
6000	540.29	289.65	206.68	165.63	141.34	125.42	114.28	106.13	99.95	95.17	91.38	88.33	85.86	83.83	82.15
7000	630.33	337.92	241.13	193.23	164.89	146.32	133.33	123.81	116.61	111.03	106.61	103.06	100.17	97.80	95.84
8000	720.38	386.20	275.57	220.84	188.45	167.22	152.37	141.50	133.27	126.89	121.83	117.78	114.48	111.77	109.53
9000	810.43	434.47	310.02	248.44	212.00	188.13	171.42	159.19	149.93	142.75	137.06	132.50	128.79	125.74	123.22
10000	900.47	482.74	344.47	276.05	235.56	209.03	190.47	176.87	166.59	158.62	152.29	147.22	143.10	139.71	136.91
11000	990.52	531.02	378.91	303.65	259.11	229.93	209.51	194.56	183.25	174.47	167.52	161.94	157.40	153.68	150.60
12000	1080.57	579.29	413.36	331.25	282.67	250.83	228.56	212.25	199.90	190.33	182.75	176.66	171.71	167.65	164.29
13000	1170.61	627.57	447.81	358.86	306.22	271.73	247.60	229.93	216.56	206.19	197.98	191.38	186.02	181.62	177.98
14000	1260.66	675.84	482.25	386.46	329.78	292.64	266.65	247.62	233.22	222.05	213.21	206.11	200.33	195.59	191.67
15000	1350.71	724.11	516.70	414.07	353.33	313.54	285.70	265.31	249.88	237.91	228.43	220.83	214.64	209.55	205.36
16000	1440.76	772.39	551.14	441.67	376.89	334.44	304.74	283.00	266.54	253.77	243.66	235.55	228.95	223.53	219.05
17000	1530.80	820.66	585.59	469.27	400.44	355.34	323.79	300.68	283.20	269.63	258.89	250.27	243.26	237.50	232.74
18000	1620.85	868.94	620.04	496.88	424.00	376.25	342.83	318.37	299.85	285.49	274.12	264.99	257.57	251.47	246.43
19000	1710.90	917.21	654.48	524.48	447.55	397.15	361.88	336.06	316.51	301.35	289.35	279.71	271.88	265.44	260.12
20000	1800.94	965.48	688.93	552.09	471.11	418.05	380.93	353.74	333.17	317.21	304.58	294.43	286.19	279.41	273.81
21000	1890.99	1013.76	723.37	579.69	494.66	438.95	399.97	371.43	349.83	333.07	319.81	309.16	300.50	293.38	287.50
22000	1981.04	1062.03	757.82	607.24	518.22	459.86	419.02	389.12	366.49	348.93	335.03	323.88	314.80	307.35	301.19
23000	2071.08	1110.30	792.27	634.90	541.78	480.76	438.06	406.80	383.14	364.79	350.26	338.60	329.11	321.32	314.88
24000	2161.13	1158.58	826.71	662.50	565.33	501.66	457.11	424.49	399.80	380.65	365.49	353.32	343.42	335.30	328.57
25000	2251.18	1206.85	861.16	690.11	588.89	522.56	476.16	442.18	416.46	396.53	380.72	368.04	357.73	349.27	342.26
26000	2341.22	1255.13	895.61	717.71	612.44	543.46	495.20	459.86	433.12	412.37	395.95	382.76	372.04	363.24	355.95
27000	2431.27	1303.40	930.05	745.31	636.00	564.37	514.25	477.55	449.78	428.23	411.18	397.48	386.35	377.21	369.64
28000	2521.32	1351.67	964.50	772.92	659.55	585.27	533.30	495.24	466.44	444.09	426.41	412.21	400.66	391.18	383.33
29000	2611.36	1399.95	998.94	800.52	683.11	606.17	552.34	512.93	483.09	459.95	441.63	426.93	414.97	405.15	397.02
30000	2701.41	1448.22	1033.39	828.13	706.66	627.07	571.39	530.61	499.75	475.81	456.86	441.65	429.28	419.12	410.71

Monthly Payment Required to Amortize a Loan 15.75%

	15 Years	16 Years	17 Years	18 Years	19 Years	20 Years	21 Years	22 Years	23 Years	24 Years	25 Years	30 Years	35 Years	40 Years
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

49

Answer Key

A.1
1. $150.10
2. $159.98
3. $288.79
4. a) (S.O'Reilly) 8 + 7.75 + 9 + 10 + 8 = 42.75 - 40 = 2.75
   40 x $5 = $200.00 Regular time
   2.75 x ($5 x 1 1/2) 7.50 = $20.63 Overtime
   $200.00 + $20.63 = $220.63 Gross pay
   b) $302.09
   c) $165.17
   d) $348.74
5. a) $205.00
   b) $308.13
   c) $164.78
   d) $373.23
6. a) $195.75
   b) $408.71
7. $8.80
8. $545.95

A.2,a
1. a) $500
   b) $786
   c) $89.60
   d) $298.92
   e) $92.28
   f) $682.50
   g) $899.90
2. $8255.00
3. $48.50
4. $1293

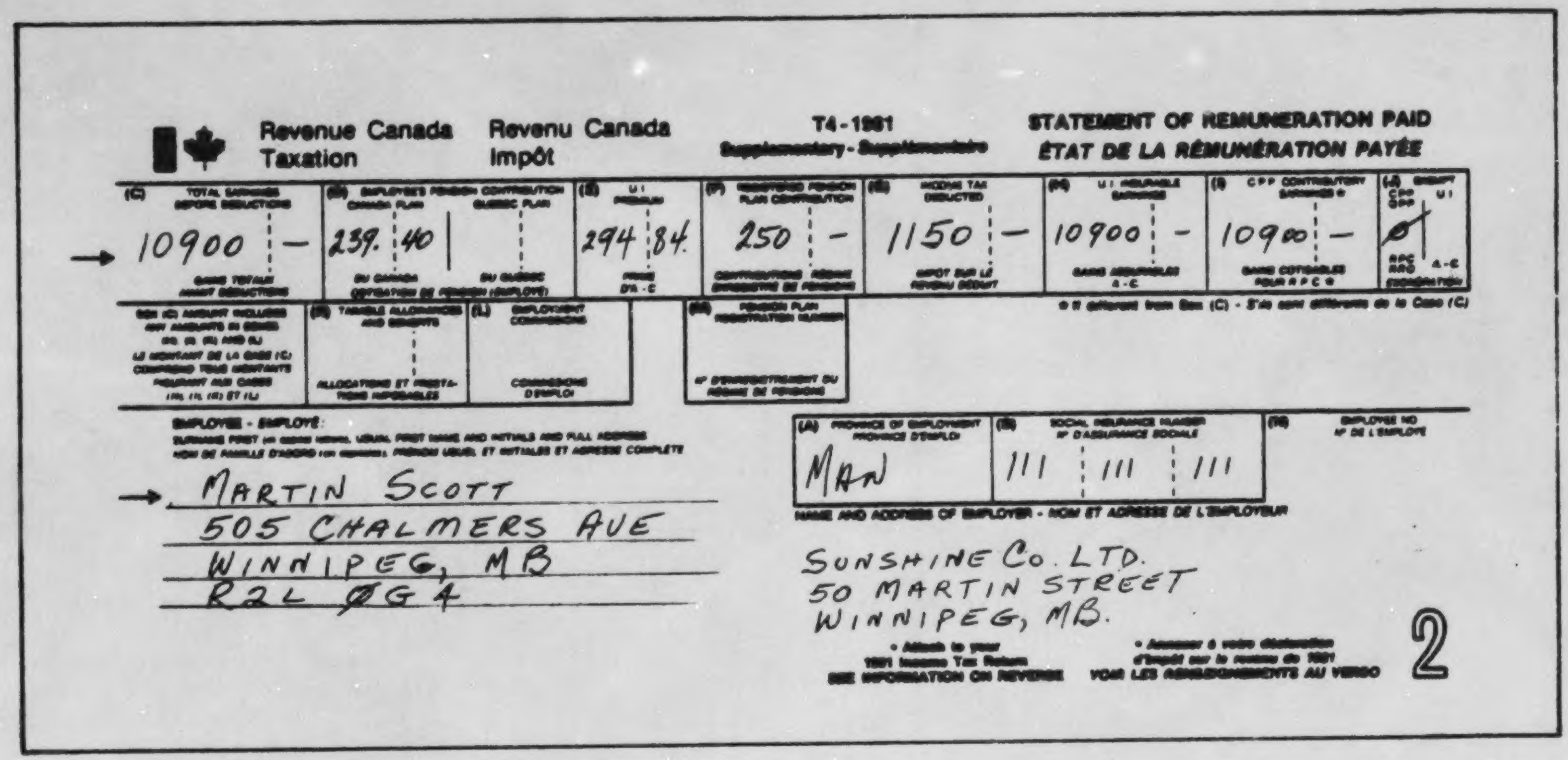
A.2,b
1. $680
2. a) (Gasket) $10 000
   5 000 @ 10% = $ 500
   5 000 @ 15% = 750
   $1250
   b) $400
   c) $2000
3. a) $1650
   b) $2550
   c) $1125
   d) $2150
   e) $3150
   f) $1600

A.3
1. a) (Bench) $300 + (15% x 2000) 300 = $600
   b) $500; $800
   c) $400; $900
   d) $665; $1115
   e) $601.25; $1101.25
2. $252.50
3. Salesman 1: $510; Salesman 2: $510. They both earned the same.
4. $680

A.4,A.5
1. $4.92; $3.92; $291.16; 1; $57.45; $233.71
   $5.46; $3.92; $317.12; 4; $59.05; $258.07
   $6.50; $3.92; $399.18; 13; $60.05; $399.13
   $5.10; $3.92; $300.74; 1; $60.60; $240.14
   $8.70; $3.92; $493.27; 2; $125.30; $367.97
   $5.37; $3.92; $312.03; 2; $61.90; $250.13
   $7.35; $3.92; $424.48; 1; $101.40; $323.08
   $6.27; $3.92; $362.77; 7; $66.25; $296.52

2. $299.45
3. Gross pay: 40 x 7.75 = $310.00
   4 x (7.75 x 1 1/2)11.63 = $46.50
   $310.00 + $46.50 = $356.50
   $356.50 - 6.00 (CPP) - 3.92 (UI) = $346.58 Taxable Income
   Income Tax (Code 1) $75.25
   $346.58 - 72.25 = $271.33 net pay
4. $341.78
5. $301.03
6. $246.90
7. $284; $31.95; $315.95; $5.28; $3.92; $62.15; $80.91; $235.04
   $284; - ; $284.00; $4.66; $3.83; $48.35; $66.73; $217.27
   $350; - ; $350.00; $5.82; $3.92; $64.85; $80.30; $269.70
   $269.80; $26.63; $296.43; $4.92; $3.92; $54.05; $72.45; $223.98
   $276.90; $31.95; $308.85; $5.10; $3.92; $52.80; $67.53; $241.32

SAMPLE A.



Revenue Canada Taxation
Revenu Canada Impôt

T4-1981
Supplementary - Supplémentaire

STATEMENT OF REMUNERATION PAID
ÉTAT DE LA RÉMUNÉRATION PAYÉE

(C) TOTAL EARNINGS BEFORE DEDUCTIONS	(D) EMPLOYEE'S PENSION CONTRIBUTION CANADA PLAN	QUEBEC PLAN	(E) U I PREMIUM	(F) REGISTERED PENSION PLAN CONTRIBUTION	(G) INCOME TAX DEDUCTED	(H) U I INSURABLE EARNINGS	(I) CPP CONTRIBUTORY EARNINGS *	(J) EXEMPT CPP QPP UI
10900 –	239.40		294.84	250 –	1150 –	10900 –	10900 –	Ø

* If different from Box (C) - S'ils sont différents de la Case (C)

EMPLOYEE - EMPLOYÉ:

MARTIN SCOTT
505 CHALMERS AVE
WINNIPEG, MB
R2L 0G4

(A) PROVINCE OF EMPLOYMENT	(B) SOCIAL INSURANCE NUMBER	(N) EMPLOYEE NO
MAN	111 111 111	

NAME AND ADDRESS OF EMPLOYER - NOM ET ADRESSE DE L'EMPLOYEUR

SUNSHINE Co. LTD.
50 MARTIN STREET
WINNIPEG, MB.

2

D

You also received $ 292.30 for Bank interest from the Bank of Montreal.

In addition, you paid the following:

Union Dues $ 185.00

Dentist Bills $ 400

Safety Deposit Box Rental $ 13.00

Muscular Dystrophy $ 35.00

University of Manitoba tuition fees for one course $ 95.00

39

SAMPLE A.

T1 GENERAL-1981

Revenue Canada Taxation
Revenu Canada Impôt

1981 Federal and Provincial Individual Income Tax Return

(ALL PROVINCES EXCEPT QUEBEC)

Identification

Family or Last Name (Please print): Mr. Mrs. Miss Ms. SCOTT

Usual First Name and Initials (Please print): MARTIN.

Present Address (Please print): 505 CHALMERS AVENUE

Number, Street and Apt. No., or P.O. Box No. or R.R. No.

City: WINNIPEG. MB.

Province or Territory:
Postal Code: R2L0G4

Is this your first Income Tax return? Yes 1 ☑ No 2 ☐

If 'No', please state year for which last return filed. 19

Name on last return: same as above ☐ or

Address on last return: same as above ☐ or

Social Insurance Number: 1 1 1 1 1 1 1 1 1
As on your Social Insurance Number card

Date of Birth: 27 (Day) 09 (Month) 82 (Year)

Province or Territory of Residence on December 31, 1981, was: MANITOBA.

If self-employed in 1981, please state province where business located:

On December 31, 1981, I was: Married 1 ☐ Widow(er) 2 ☐ Divorced 3 ☐ Separated 4 ☐ Single 5 ☑

Usual First Name of Spouse

Address of Spouse: same as mine ☐ or

Spouse's Social Insurance Number

If you became or ceased to be a resident of Canada in 1981, please give:
Date of Entry 1 Day Month or Departure 2 Day Month

Type of work or occupation in 1981: CLERK

Name of present employer: SONSHINE CO. LTD.

Calculation of Total Income

					$	C	
Income from Employment	Total Earnings Before Deductions from Box C on all T4 slips (attach copy 2 of T4 slips)				10 900	—	
	Commissions from Box L on all T4 slips, included in above total		0				
	Other employment income including adult training allowances, tips and gratuities, etc. (Guide item 3; please specify)				0		
	Total employment earnings (add lines 01 and 03)	04			10900	—	
	Subtract: Employment expense deduction (Guide item 4) If line 04 above is $16,667 or more claim $500.00 If less, claim 3% of line 04 (10900 x 3%)		327	—			
	Other allowable expenses (Guide item 5; please specify)		0				
	Total employment expenses (add lines 05 and 06)	07	327	—	D 327	—	
	Net employment earnings (subtract line 07 from line 04)	08			10573	—	
Pension Income	Old Age Security Pension (attach copy 2 of T4A(OAS) slip)						
	Canada or Quebec Pension Plan benefits (attach copy 2 of T4A(P) slip)						
	Other pensions or superannuation (attach copy 3 of T4A slips)						
Income from Other Sources	Taxable Family Allowance payments (Guide item 7; attach copy of TFA1 slip)						
	Unemployment Insurance benefits (attach copy 2 of T4U slip)						
	Taxable amount of dividends from taxable Canadian corporations (attach completed Schedule 4)						
	Interest and other investment income (attach completed Schedule 4)				292	30	
	Rental income (Schedule 7) Gross	Net					
	Taxable capital gains (Allowable capital losses)—complete and attach Schedule 2	17					
	Other income (Guide item 17; please specify)						
Income from Self-Employment	Report both 'Gross' and 'Net'. (Guide item 18). Provide other information concerning self-employment on page 3.						
	Business income Gross	Net					
	Professional income Gross	Net					
	Commission income Gross	Net					
	Farming income Gross	Net					
	Fishing income Gross	Net					
Total Income	(add lines 08 to 23 inclusive — please enter this amount on line 24 on page 2)	24			10 865	30	D 10865 30

Please do not use this area

Please do not use this area

2 Calculation of Taxable Income

	Line	$	¢	$	¢
Total Income (from line 24 on page 1)	24			10865	30

Deductions from Total Income

	Line	$	¢	$	¢
Canada or Quebec Pension Plan contributions (Guide item 19)					
Contributions through employment from Box D on all T4 slips (maximum $239.40)		239	40		
Contribution payable on self-employed earnings (from page 3)					
Unemployment Insurance premiums from Box E on all T4 slips (maximum $294.84, Guide item 20)		294.	84		
Registered pension plan contributions (Guide item 21) (BOX F)		250	00		
Registered retirement savings plan premiums (Guide item 22; attach receipts)					
Registered home ownership savings plan contributions (Guide item 23; attach receipts)					
Annual union, professional or like dues (Guide item 24; attach receipts)		185	00		
Tuition fees—claimable by student only (Guide item 25; attach receipts)		95	00		
Child care expenses (complete and attach Schedule 5)					
Allowable business investment losses (Guide item 27)					
Other deductions (Guide item 28; please specify) SAFETY DEPOSIT BOX		13	00		
Add lines 25 to 39 inclusive	40	1077	24	1077	24
Net Income (subtract line 40 from line 24)	41			9788	06

Claim for Personal Exemptions

	$	¢
Basic Personal Exemption Claim $3,170.00	3170	00
Age Exemption—If you were born in 1916 or earlier Claim $1,980.00 If you did not receive the Old Age Security Pension, attach a letter giving reasons		

Married Exemption (Guide items 31 and 32)—If applicable, please check ☑ box 1. or 2.

Married on or before December 31, 1981, and supported spouse in 1981

1. whose net income in that year, while married, was not over $490. 1. ☐ Claim $2,780.00

2. whose net income in that year, while married, was over $490. but not over $3,270. 2. ☐ 3,270 00

Subtract: spouse's net income while married

Claim

Married exemption amount: 0

If you became married in 1981, please give date of marriage

Exemption for Wholly Dependent Children *See Guide item 34.*

Provide details below and claim according to child's age and net income. Do not claim here for a child you have claimed on Schedule 6. See Guide item 34 if child's net income exceeds limit.

Children born in 1964 or later—Claim $590 for each child whose net income was not over $2,090.

Children born in 1963 or earlier—Claim $1,090 for each child whose net income was not over $2,180 and who, if born in 1959 or earlier, was in full-time attendance at a school or university or was infirm.

Name of child (attach list if space insufficient)	*Relationship to you*	*Date of birth of child Day*	*Month*	*Year*	*If born in 1959 or earlier state whether infirm or school attended*	*Net income in 1981 $*	*Claim*

	Line	$	¢	$	¢
Total claim for wholly dependent children		0			
Additional Personal Exemptions from Schedule 6 attached		0			
Total Personal Exemptions (add above items)	45	3170	00	3170	00
Subtract line 45 from line 41	46			6618	06

Other deductions from Net Income

	Line	$	¢	$	¢
Standard deduction—Claim $100 (no receipts required) or total at line 50 below, but not both	47	141	36		
Medical expenses—(attach receipts and completed Schedule 9)		400	00		
Subtract: 3% of 'Net Income' (line 41 above) 9788.06 x 3%		293	64		
Allowable portion of medical expenses		106	36		
Add: **Charitable donations** (attach receipts)		35	00		
Total *(If this amount is greater than $100, enter on line 47 above)*	50	141	36		
Interest, dividends and capital gains deduction (Guide item 40; attach completed Schedule 4)		292.	30		
Pension income deduction (Guide item 41)					
Deduction for blind persons or persons confined to a bed or wheelchair (Guide item 42) Claim relates to: Self ☐ or dependent other than spouse (specify)		0			
Education deduction (Guide item 43; attach completed form T2202 or T2202A)		0			
Eligible deductions transferred from spouse (Guide item 44; attach completed Schedule 3)					
Gifts to Canada or a province (Guide item 45; attach receipts)					
Unemployment Insurance benefit repayment payable from page 3 (Guide item 46)					
Non-capital losses of other years (Guide item 48)					
Capital losses of other years (1972 to 1980) (Guide item 49)					
Add lines 47, 51 to 60 inclusive	61	433	66	433	66
Taxable Income (subtract line 61 from line 46—enter this amount on page 4)				6184	40

MANITOBA TAX CREDIT PROGRAMS

T1C (MAN.)–1981

Calculation of Manitoba Cost of Living Tax Credit for 1981

Basic Credit: 3% of the total of the amounts on lines 45, 53 and 54 on page 2 of your return $ 95 ¢ 10 (A)

(3170 x 3%)

Use this area if you are a married person at the end of 1981 and your spouse has agreed that only you will claim the Manitoba Cost of Living Tax Credit for the family.

Enter 3% of the total of the amounts that are claimable by your spouse on lines 45, 53 and 54 on page 2 of your spouse's return

Subtract: 3% of the amount claimed, if any, on line 42 on page 2 of your return → 0 (B)

Total of above amounts (A) and (B) 95 10 (C)

Subtract: 1% of 'Family Income' (line 3 below) 9788.06 x 1% 97 88

Manitoba Cost of Living Tax Credit—*If negative, enter zero* 0 (D)

Calculation of Family Income (If single, or spouse has no net income, enter zero at line 2 below)

My Net Income (line 41 on page 2 of my return) 1 9788 06

My spouse's Net Income (line 41 on my spouse's return— *If negative, enter zero*) 2 0

Family Income (Add lines 1 and 2) 3 9788 06

Calculation of Manitoba Property Tax Credit for 1981

Total Rental Payments for 1981 in Manitoba ● X 20% =

Net Property Taxes *paid* for 1981 in Manitoba ●

Add: Resident Homeowner Tax Assistance (see instruction on back)—*if not received, enter zero*

Occupancy Cost (total of above three lines) ● (E)

Basic Credit of $525 5 2 5 0 0

Senior Citizens—Add $100 if you were born in 1916 or earlier

Sub-total

Subtract: 1% of 'Family Income' (line 3 above)

Total (minimum $325) (F)

Total Manitoba Property Tax Credit—Enter Amount (E) or Amount (F), whichever is less

Subtract: (a) Resident Homeowner Tax Assistance if received

(b) Shelter Allowance Program benefits received during 1981 *(see reverse)* →

Net Manitoba Property Tax Credit *(If claimed, complete Declaration on reverse)* → 0 (G)

Manitoba Cost of Living and Property Tax Credit—Add Amounts (D) and (G). If you did not have a Manitoba Political Contribution in 1981, enter this amount on line 74 of your return. 0 (H)

Calculation of Manitoba Political Contribution Tax Credit for 1981

Attach official receipts to this form *otherwise your claim will be rejected.*

Total Manitoba Political Contributions in 1981

Allowable credit—75% of first $100 of Total Contributions is

50% of next $450 of Total Contributions is

33⅓% of amount of Total Contributions exceeding $550 is

Total allowable credit *(maximum $500)* (i)

Manitoba Tax Payable (from line 67 on your return) (ii)

ALLOWABLE MANITOBA POLITICAL CONTRIBUTION TAX CREDIT—Enter Amount (i), or Amount (ii), whichever is *less* (I)

Manitoba Tax Credits—Total of Amounts (H) and (I)—Enter this amount on line 74 on your return.

Certification

I certify that the information on this document is true and correct.

Sign here M. Scott

T1 – 1981

Schedule 4—Statement of Investment Income (Guide items 8 to 13)

State names of payers in appropriate areas and enclose any information slips received. If space below is insufficient attach statements.

A—Taxable Amount of Dividends from Taxable Canadian Corporations (from Boxes H and I on T3 slips or Boxes B and F on T5 slips)

Include amounts credited through banks, trust companies, brokers and estates.

1. Dividends Eligible for Interest, Dividends and Capital Gains Deduction—*do not include dividends received from a corporation not dealt with at arm's length* (Guide item 40)

	$	c		$	c	
Total dividends eligible for interest, dividends and capital gains deduction *(area E below)*			▷			(A)

2. Dividends Not Eligible for Interest, Dividends and Capital Gains Deduction—*include dividends received from a corporation not dealt with at arm's length* (Guide item 40)

	$	c		$	c
Total dividends not eligible for interest, dividends and capital gains deduction			▷		
Taxable Amount of Dividends from Taxable Canadian Corporations *(Enter this amount on line 14 on page 1 of return)*					

B—Interest from Canadian Sources Eligible for Interest, Dividends and Capital Gains Deduction

		$	c		$	c	
Interest—Bonds, from Trust, Bank or other Deposits (specify)							
	BANK OF MONTREAL	292	30				
Interest from Mortgages, Notes and other							
Securities *(except interest received from a related*							
person and from a partnership by a partner)							
Eligible Annuity Payments (Guide item 10)							
Total Interest from Canadian Sources Eligible for Interest, Dividends and Capital Gains Deduction *(area E below)*		292	30	▷	292	30	(B)

C—Other Investment Income Not Eligible for Interest, Dividends and Capital Gains Deduction

		$	c		$	c	
Other Canadian Investment Income (specify)							
Interest and Other Investment							
Income from Foreign Sources							
Total Other Investment Income Not Eligible for Interest, Dividends and Capital Gains Deduction				▷	0		(C)
Total Interest and Other Investment Income *(Total of amounts (B) and (C)—enter on line 15 on page 1 of your return)*					292	30	

D—Carrying Charges (Guide item 28A)

	$	c	
Interest on money borrowed to earn Investment Income eligible for Interest, Dividends and Capital Gains Deduction			
Interest on money borrowed to earn other Investment Income			
Management or Safe Custody Fees			
Safety Deposit Box Charges	13	00	
Accounting Fees			
Investment Counsel Fees			
Other *(please specify)*			
Total Carrying Charges *(Enter this amount as 'Other deductions' on line 39 on page 2 of your return)*	13	00	(D)

E—Calculation of Interest, Dividends and Capital Gains Deduction (Guide item 40)

	$	c	
Total dividends eligible for interest, dividends and capital gains deduction *(amount (A) above)*			
Total interest from Canadian sources eligible for interest, dividends and capital gains deduction *(amount (B) above)*	292	30	
Eligible Taxable Capital Gains One-half of the Gains included in the amounts on lines 978, 980 and in amount (A) in the "Information Slips" area on Schedule 2 *(for the purpose of this calculation, capital losses should be excluded from these amounts)*			
Total of above three amounts			(E)
Subtract: Interest on money borrowed to earn income eligible for this deduction (Guide item 28A)			
Net amount eligible for interest, dividends and capital gains deduction	292	30	(F)

Interest, Dividends and Capital Gains Deduction *(Enter $1,000 or amount (F), whichever is less, on line 51 on page 2 of your return)*

4 Summary of Tax and Credits

There are two methods of tax calculation (see Guide item 51).

Taxable Income from line 62 on page 2 $ 6184 40

		$	¢
Federal Tax Payable from Tax Table in Guide or from line 63 on Schedule 1	63	757	00
Subtract: **Federal Political Contribution Tax Credit** from calculation on page 3	64		
Federal Tax Payable Before Business Investment Tax Credit		757	00
Subtract: **Business Investment Tax Credit** from form T2038(IND.) (Guide item 55)	●		
Federal Tax Payable Before Employment Tax Credit		757	00
Subtract: **Employment Tax Credit Claimed** from form T2208 (Guide item 56)	66		
Net Federal Tax Payable		757	00
Add: **Provincial Tax Payable** from Tax Table in Guide or from line 67 on Schedule 1	67	440	10
Canada Pension Plan Contribution Payable on Self-Employed Earnings from page 3	68		
Unemployment Insurance Benefit Repayment Payable from page 3 (Guide item 46)	69		
Total Payable	●	1197	10

Net Current Year Employment Credits $

Total Federal Political Contributions $

Tax Adjustments $

Foreign Taxes Paid $

Net Foreign Income $

Total Investment in Qualified Property $

$

$

$

If taxpayer is deceased, please give date of death

Day Month Year

		$	¢		$	¢
Total tax deducted per information slips "Box G"	●	1150	—			
Provincial Tax Credits (Guide item 68)	●	0				
Canada Pension Plan Overpayment (Guide item 19)	●					
Unemployment Insurance Overpayment (Guide item 20)	●					
Amounts paid by instalments	●					
Child Tax Credit (from Schedule 10)	●					
Total Credits		1150	—	▷	1150	—
Please enter this difference in applicable space below.					47	10

A difference of less than $1.00 is neither charged nor refunded.

Refund ●

Balance Due ● 47 10

Amount Enclosed 47 10

Please attach cheque or money order payable to the Receiver General. Do not mail cash. Payment is due not later than April 30, 1982.

Name and address of any individual or firm, other than the taxpayer, who has prepared this return for compensation.

Name

Address

Telephone

I hereby certify that the information given in this return and in any documents attached is true, correct and complete in every respect and fully discloses my income from all sources.

Please sign here M. Scott

Date Mar. 20/82 Telephone 666 - 6666

It is a serious offence to make a false return.

Canadian Human Rights Act Federal Information Bank number 1580

Form authorized and prescribed by order of the Minister of National Revenue for purposes of Part I of the Income Tax Act, Part I of the Canada Pension Plan and Part VIII of the Unemployment Insurance Act, 1971.

Exercise No. 1.

Revenue Canada Taxation　Revenu Canada Impôt

T1 GENERAL-1981

1981 Federal and Provincial Individual Income Tax Return

(ALL PROVINCES EXCEPT QUEBEC)

Identification

Family or Last Name (Please print): CONNORS

Usual First Name and Initials (Please print): PETER

Present Address (Please print): 25 FOREST DRIVE

Number, Street and Apt. No., or P.O. Box No. or R.R. No.

City: CARMAN

Province or Territory: MB　Postal Code: R0G0J0

● Is this your first Income Tax return? Yes 1 ☑ No 2 ☐

If 'No', please state year for which last return filed. 19

Name on last return: same as above ☐ or

Address on last return: same as above ☐ or

◆ Social Insurance Number: 1 1 1 1 1 1 1 1 1 (As on your Social Insurance Number card)

● Date of Birth: Day 23 Month 12 Year 62

◆ Province or Territory of Residence on December 31, 1981, was: MANITOBA.

◆ If self-employed in 1981, please state province where business located: /

◆ On December 31, 1981, I was: Married 1 ☐ Widow(er) 2 ☐ Divorced 3 ☐ Separated 4 ☐ Single 5 ☑

● Usual First Name of Spouse

Address of Spouse: same as mine ☐ or

◆ Spouse's Social Insurance Number

◆ If you became or ceased to be a resident of Canada in 1981, please give:

Date of Entry 1 Day Month　or Departure 2 Day Month

Type of work or occupation in 1981: CLERK

Name of present employer: SUNKIST FRUIT MARKET

Calculation of Total Income

				$	c	
Income from Employment	Total Earnings Before Deductions from Box C on all T4 slips (attach copy 2 of T4 slips)			3000	00	⊙
	Commissions from Box L on all T4 slips, included in above total					
	Other employment income including adult training allowances, tips and gratuities, etc. (Guide item 3; please specify)			0		⊙
	Total employment earnings (add lines 01 and 03)		04	3000	00	
	Subtract: Employment expense deduction (Guide item 4) If line 04 above is $16,667 or more claim $500.00 If less, claim 3% of line 04	90	00			⊙
	Other allowable expenses (Guide item 5; please specify)	0				⊙
	Total employment expenses (add lines 05 and 06) 07	90	00	90	00	
	Net employment earnings (subtract line 07 from line 04)		08	2910	00	
Pension Income	Old Age Security Pension (attach copy 2 of T4A(OAS) slip)					⊙
	Canada or Quebec Pension Plan benefits (attach copy 2 of T4A(P) slip)					⊙
	Other pensions or superannuation (attach copy 3 of T4A slips)					⊙
Income from Other Sources	Taxable Family Allowance payments (Guide item 7; attach copy of TFA1 slip)					⊙
	Unemployment Insurance benefits (attach copy 2 of T4U slip)					⊙
	Taxable amount of dividends from taxable Canadian corporations (attach completed Schedule 4)					⊙
	Interest and other investment income (attach completed Schedule 4)					⊙
	Rental income (Schedule 7) Gross		Net			⊙
	Taxable capital gains (Allowable capital losses) — complete and attach Schedule 2		17			
	Other income (Guide item 17; please specify)					⊙
Income from Self-Employment	Report both 'Gross' and 'Net'. (Guide item 18). Provide other information concerning self-employment on page 3.					
	Business income Gross		Net			⊙
	Professional income Gross		Net			⊙
	Commission income Gross		Net			⊙
	Farming income Gross		Net			⊙
	Fishing income Gross		Net			⊙
Total Income	(add lines 08 to 23 inclusive — please enter this amount on line 24 on page 2)		24	2910	00	2910 00

Please do not use this area　　Please do not use this area

2 Calculation of Taxable Income

		$	¢		$	¢
	Total Income (from line 24 on page 1)			24	2910	00
Deductions from Total Income	Canada or Quebec Pension Plan contributions (Guide item 19)	$	¢			
	Contributions through employment from Box D on all T4 slips (maximum $239.40)	28	80			
	Contribution payable on self-employed earnings (from page 3)					
	Unemployment Insurance premiums from Box E on all T4 slips (maximum $294.84; Guide item 20)	40	50			
	Registered pension plan contributions (Guide item 21)					
	Registered retirement savings plan premiums (Guide item 22; attach receipts)					
	Registered home ownership savings plan contributions (Guide item 23; attach receipts)					
	Annual union, professional or like dues (Guide item 24; attach receipts)					
	Tuition fees—claimable by student only (Guide item 25; attach receipts)					
	Child care expenses (complete and attach Schedule 5)					
	Allowable business investment losses (Guide item 27)					
	Other deductions (Guide item 28; please specify)					
	Add lines 25 to 39 inclusive 40	69	30	▷	69	30
	Net Income (subtract line 40 from line 24)			41	2840	70

			$	¢		$	¢
Claim for Personal Exemptions	**Basic Personal Exemption**	Claim $3,170.00	3170	00			
	Age Exemption—If you were born in 1916 or earlier If you did not receive the Old Age Security Pension, attach a letter giving reasons.	Claim $1,980.00					
	Married Exemption (Guide items 31 and 32)—If applicable, please check ☑ box 1. or 2. **Married on or before December 31, 1981, and supported spouse in 1981**						
	1. whose net income in that year, while married, was not over $490. 1. ☐	Claim $2,780.00					
	2. whose net income in that year, while married, was over $490. but not over $3,270. 2. ☐	3,270 00					
	Subtract: spouse's net income while married						
	If you became married in 1981, please give date of marriage	Claim					

Exemption for Wholly Dependent Children *See Guide item 34.*
Provide details below and claim according to child's age and net income. Do not claim here for a child you have claimed on Schedule 6. See Guide item 34 if child's net income exceeds limit.
Children born in 1964 or later—Claim $590 for each child whose net income was not over $2,090.
Children born in 1963 or earlier—Claim $1,090 for each child whose net income was not over $2,180 and who, if born in 1959 or earlier, was in full-time attendance at a school or university or was infirm.

Name of child (attach list if space insufficient)	*Relationship to you*	*Date of birth of child* Day	Month	Year	*If born in 1959 or earlier state whether infirm or school attended*	*Net income in 1981* $	Claim	

	$	¢		$	¢
Total claim for wholly dependent children			▷		
Additional Personal Exemptions from Schedule 6 attached					
Total Personal Exemptions (add above items)	3170	00	▷	3170	00
Subtract line 45 from line 41			46	0	

			$	¢		$	¢
Other deductions from Net Income	**Standard deduction**—Claim $100 (no receipts required) or total at line 50 below, but not both	47	100	00			
	Medical expenses—(attach receipts and completed Schedule 9)						
	Subtract: 3% of 'Net Income' (line 41 above)						
	Allowable portion of medical expenses						
	Add: **Charitable donations** (attach receipts)						
	Total *(If this amount is greater than $100, enter on line 47 above)*	50					
	Interest, dividends and capital gains deduction (Guide item 40; attach completed Schedule 4)						
	Pension income deduction (Guide item 41)						
	Deduction for blind persons or persons confined to a bed or wheelchair (Guide item 42) Claim relates to: Self ☐ or dependant other than spouse (specify)						
	Education deduction (Guide item 43; attach completed form T2202 or T2202A)						
	Eligible deductions transferred from spouse (Guide item 44; attach completed Schedule 3)						
	Gifts to Canada or a province (Guide item 45; attach receipts)						
	Unemployment Insurance benefit repayment payable from page 3 (Guide item 46)						
	Non-capital losses of other years (Guide item 48)						
	Capital losses of other years (1972 to 1980) (Guide item 49)						
	Add lines 47, 51 to 60 inclusive	61	100	00	▷	100	00
	Taxable Income (subtract line 61 from line 46—enter this amount on page 4)					0	

47 Exercise 1.

MANITOBA TAX CREDIT PROGRAMS

T1C (MAN.)–1981

Calculation of Manitoba Cost of Living Tax Credit for 1981

	$	¢	
Basic Credit: 3% of the total of the amounts on lines 45, 53 and 54 on page 2 of your return	95	10	(A)

Use this area if you are a married person at the end of 1981 and your spouse has agreed that only you will claim the Manitoba Cost of Living Tax Credit for the family.

Enter 3% of the total of the amounts that are claimable by your spouse on lines 45, 53 and 54 on page 2 of your spouse's return

Subtract: 3% of the amount claimed, if any, on line 42 on page 2 of your return

	$	¢	
	0		(B)
Total of above amounts (A) and (B)	95	10	(C)
Subtract: 1% of 'Family Income' (line 3 below)	28	41	
Manitoba Cost of Living Tax Credit—*If negative, enter zero*	66	69	(D)

Calculation of Family Income (If single, or spouse has no net income, enter zero at line 2 below)

		$	¢
My Net Income (line 41 on page 2 of my return)	1	2840	70
My spouse's Net Income (line 41 on my spouse's return—*if negative, enter zero*)	2	0	
Family Income (Add lines 1 and 2)	3	2840	70

Calculation of Manitoba Property Tax Credit for 1981

Total Rental Payments for 1981 in Manitoba ● ☐ X 20% =

Net Property Taxes *paid* for 1981 in Manitoba ●

Add: Resident Homeowner Tax Assistance (see instruction on back)—*If not received, enter zero* ●

Occupancy Cost (total of above three lines) ● (E)

Basic Credit of $525	525	00
Senior Citizens—Add $100 if you were born in 1916 or earlier		
Sub-total		
Subtract: 1% of 'Family Income' (line 3 above)		
Total (minimum $325)		(F)

Total Manitoba Property Tax Credit—Enter Amount (E) or Amount (F), whichever is less

Subtract: (a) Resident Homeowner Tax Assistance if received

(b) Shelter Allowance Program benefits received during 1981 *(see reverse)*

Net Manitoba Property Tax Credit *(If claimed, complete Declaration on reverse)*	0		(G)
Manitoba Cost of Living and Property Tax Credit—Add Amounts (D) and (G). If you did not have a Manitoba Political Contribution in 1981, enter this amount on line 74 of your return.	66	69	(H)

Calculation of Manitoba Political Contribution Tax Credit for 1981

Attach official receipts to this form *otherwise your claim will be rejected.*

Total Manitoba Political Contributions in 1981

Allowable credit—75% of first $100 of Total Contributions is

50% of next $450 of Total Contributions is

33⅓% of amount of Total Contributions exceeding $550 is

Total allowable credit (maximum $500) (i)

Manitoba Tax Payable (from line 67 on your return) (ii)

ALLOWABLE MANITOBA POLITICAL CONTRIBUTION TAX CREDIT—Enter Amount (i), or Amount (ii), whichever is *less* (I)

Manitoba Tax Credits—Total of Amounts (H) and (I)—Enter this amount on line 74 on your return.

Certification

I certify that the information on this document is true and correct.

Sign here X

Exercisi No. 1.

4 Summary of Tax and Credits

There are two methods of tax calculation (see Guide item 51).

Taxable Income from line 62 on page 2 $ 0

		$	¢
Federal Tax Payable from Tax Table in Guide or from line 63 on Schedule 1	63	0	
Subtract: Federal Political Contribution Tax Credit from calculation on page 3	64		
Federal Tax Payable Before Business Investment Tax Credit		0	
Subtract: Business Investment Tax Credit from form T2038(IND.) (Guide item 55)	●		
Federal Tax Paya[illegible] Before Employment Tax Credit		0	
Subtract: Employment Tax Credit Claimed from form T2208 (Guide item 56)	66		
Net Federal Tax Payable		0	
Add: Provincial Tax Payable from Tax Table in Guide or from line 67 on Schedule 1	67	0	
Canada Pension Plan Contribution Payable on Self-Employed Earnings from page 3	68		
Unemployment Insurance Benefit Repayment Payable from page 3 (Guide item 46)	69		
Total Payable	●	0	

	$	¢		$	¢
Total tax deducted per information slips ●	43	20			
Provincial Tax Credits (Guide item 68) ●	66	69			
Canada Pension Plan Overpayment (Guide item 19) ●					
Unemployment Insurance Overpayment (Guide item 20) ●					
Amounts paid by instalments ●					
Child Tax Credit (from Schedule 10) ●					
Total Credits	109	89	○	109	89
Please enter this difference in applicable space below.				109	89

A difference of less than $1.00 is neither charged nor refunded.

Refund ● $ 109 89

Balance Due ●

Amount Enclosed

Please attach cheque or money order payable to the Receiver General. Do not mail cash. Payment is due not later than April 30, 1982.

Net Current Year Employment Credits $

Total Federal Political Contributions $

Tax Adjustments $

Foreign Taxes Paid $

Net Foreign Income $

Total Investment in Qualified Property $

$

$

$

If taxpayer is deceased, please give date of death

Day Month Year

Name and address of any individual or firm, other than the taxpayer, who has prepared this return for compensation.

Name Student's name

Address address

Telephone 666-6666

Form authorized and prescribed by order of the Minister of National Revenue for purposes of Part I of the Income Tax Act, Part I of the Canada Pension Plan and Part VIII of the Unemployment Insurance Act, 1971.

I hereby certify that the information given in this return and in any documents attached is true, correct and complete in every respect and fully discloses my income from all sources.

Please sign here

Date

Telephone

It is a serious offence to make a false return.

Canadian Human Rights Act Federal Information Bank number 18005

Exercise 1-A.

T1 GENERAL-1981

Revenue Canada Taxation
Revenu Canada Impôt

1981 Federal and Provincial Individual Income Tax Return

(ALL PROVINCES EXCEPT QUEBEC)

Identification

Family or Last Name (Please print): CONNORS

Usual First Name and Initials (Please print): PETER

Present Address (Please print): 25 FOREST DRIVE

Number, Street and Apt. No., or P.O. Box No. or R.R. No.

City: ~~Mc~~CARMAN

Province or Territory: MB

Postal Code: R0G0J0

Is this your first Income Tax return? Yes 1 ☑ No 2 ☐

If 'No', please state year for which last return filed. 19

Name on last return: same as above ☐ or

Address on last return: same as above ☐ or

Social Insurance Number: 1 1 1 1 1 1 1 1 1

As on your Social Insurance Number card

Date of Birth: 23 (Day) 12 (Month) 62 (Year)

Province or Territory of Residence on December 31, 1981, was: MANITOBA.

If self-employed in 1981, please state province where business located:

On December 31, 1981, I was: Married 1 ☐ Widow(er) 2 ☐ Divorced 3 ☐ Separated 4 ☐ Single 5 ☑

Usual First Name of Spouse

Address of Spouse: same as mine ☐ or

Spouse's Social Insurance Number

If you became or ceased to be a resident of Canada in 1981, please give:

Date of Entry 1 Day Month or Departure 2 Day Month

Type of work or occupation in 1981: CLERK

Name of present employer: SUNKIST FRUIT MARKET.

Calculation of Total Income

				$	¢
Income from Employment	Total Earnings Before Deductions from Box C on all T4 slips (attach copy 2 of T4 slips)			8000	00
	Commissions from Box L on all T4 slips, included in above total				
	Other employment income including adult training allowances, tips and gratuities, etc. (Guide item 3; please specify)			0	
	Total employment earnings (add lines 01 and 03)	04		8000	00
	Subtract: Employment expense deduction (Guide item 4) If line 04 above is $16,667 or more claim $500.00 If less, claim 3% of line 04		240 00		
	Other allowable expenses (Guide item 5; please specify)		0		
	Total employment expenses (add lines 05 and 06)	07	240 00	240	00
	Net employment earnings (subtract line 07 from line 04)	08		7760	00
Pension Income	Old Age Security Pension (attach copy 2 of T4A(OAS) slip)				
	Canada or Quebec Pension Plan benefits (attach copy 2 of T4A(P) slip)				
	Other pensions or superannuation (attach copy 3 of T4A slips)				
Income from Other Sources	Taxable Family Allowance payments (Guide item 7; attach copy of TFA1 slip)				
	Unemployment Insurance benefits (attach copy 2 of T4U slip)				
	Taxable amount of dividends from taxable Canadian corporations (attach completed Schedule 4)				
	Interest and other investment income (attach completed Schedule 4)			50	00
	Rental income (Schedule 7) Gross / Net				
	Taxable capital gains (Allowable capital losses)—complete and attach Schedule 2	17			
	Other income (Guide item 17; please specify)				
Income from Self-Employment	Report both 'Gross' and 'Net'. (Guide item 18). Provide other information concerning self-employment on page 3.				
	Business income Gross / Net				
	Professional income Gross / Net				
	Commission income Gross / Net				
	Farming income Gross / Net				
	Fishing income Gross / Net				
Total Income	(add lines 08 to 23 inclusive — please enter this amount on line 24 on page 2)	24		7810	00

Please do not use this area

Please do not use this area

2 Calculation of Taxable Income

		$	¢		$	¢
Total Income (from line 24 on page 1)				24	7810	00

Deductions from Total Income

		$	¢		$	¢
Canada or Quebec Pension Plan contributions (Guide item 19)						
Contributions through employment from Box D on all T4 slips (maximum $239.40)		118	80			
Contribution payable on self-employed earnings (from page 3)						
Unemployment Insurance premiums from Box E on all T4 slips (maximum $294.84; Guide item 20)		80	50			
Registered pension plan contributions (Guide item 21)						
Registered retirement savings plan premiums (Guide item 22; attach receipts)						
Registered home ownership savings plan contributions (Guide item 23; attach receipts)						
Annual union, professional or like dues (Guide item 24; attach receipts)		39	00			
Tuition fees—claimable by student only (Guide item 25; attach receipts)						
Child care expenses (complete and attach Schedule 5)						
Allowable business investment losses (Guide item 27)						
Other deductions (Guide item 28; please specify)						
Add lines 25 to 39 inclusive	40	238	30		238	30
Net Income (subtract line 40 from line 24)				41	7571	70

Claim for Personal Exemptions

		$	¢
Basic Personal Exemption	Claim $3,170.00	3170	00
Age Exemption—If you were born in 1916 or earlier If you did not receive the Old Age Security Pension, attach a letter giving reasons.	Claim $1,980.00		

Married Exemption (Guide items 31 and 32)—If applicable, please check ☑ box 1. or 2.

Married on or before December 31, 1981, and supported spouse in 1981

1. whose net income in that year, while married, was not over $490.	1. ☐	Claim $2,780.00			
2. whose net income in that year, while married, was over $490. but not over $3,270.	2. ☐	3,270	00		
Subtract: spouse's net income while married					
If you became married in 1981, please give date of marriage	Claim				

Exemption for Wholly Dependent Children *See Guide item 34.*

Provide details below and claim according to child's age and net income. Do not claim here for a child you have claimed on Schedule 6. See Guide item 34 if child's net income exceeds limit.

Children born in 1964 or later—Claim $590 for each child whose net income was not over $2,090.

Children born in 1963 or earlier—Claim $1,090 for each child whose net income was not over $2,180 and who, if born in 1959 or earlier, was in full-time attendance at a school or university or was infirm.

Name of child (attach list if space insufficient)	*Relationship to you*	*Date of birth of child Day*	*Month*	*Year*	*If born in 1959 or earlier state whether infirm or school attended*	*Net income in 1981 $*	*Claim*	

		$	¢		$	¢
Total claim for wholly dependent children						
Additional Personal Exemptions from Schedule 6 attached						
Total Personal Exemptions (add above items)		3170	00		3170	00
Subtract line 45 from line 41				46	4401	70

Other deductions from Net Income

		$	¢		$	¢
Standard deduction—Claim $100 (no receipts required) or total at line 50 below, **but not both**	47	100	00			
Medical expenses—(attach receipts and completed Schedule 9)						
Subtract: 3% of 'Net Income' (line 41 above)						
Allowable portion of medical expenses						
Add: **Charitable donations** (attach receipts)						
Total *(If this amount is greater than $100, enter on line 47 above)*	50					
Interest, dividends and capital gains deduction (Guide item 40; attach completed Schedule 4)		50	00			
Pension income deduction (Guide item 41)						
Deduction for blind persons or persons confined to a bed or wheelchair (Guide item 42) Claim relates to: Self ☐ or dependent other than spouse (specify)						
Education deduction (Guide item 43; attach completed form T2202 or T2202A)						
Eligible deductions transferred from spouse (Guide item 44; attach completed Schedule 3)						
Gifts to Canada or a province (Guide item 45; attach receipts)						
Unemployment Insurance benefit repayment payable from page 3 (Guide item 46)						
Non-capital losses of other years (Guide item 48)						
Capital losses of other years (1972 to 1980) (Guide item 49)						
Add lines 47, 51 to 60 inclusive	61	150	00		150	00
Taxable Income (subtract line 61 from line 46—enter this amount on page 4)					4251	70

51 Exercise 1-A.

T1—1981

Schedule 4—Statement of Investment Income (Guide items 8 to 13)

State names of payers in appropriate areas and enclose any information slips received. If space below is insufficient attach statements.

A—Taxable Amount of Dividends from Taxable Canadian Corporations (from Boxes H and I on T3 slips or Boxes B and F on T5 slips)

Include amounts credited through banks, trust companies, brokers and estates.

1. Dividends Eligible for Interest, Dividends and Capital Gains Deduction—*do not include dividends received from a corporation not dealt with at arm's length* (Guide item 40)

	$	c	$	c	
Total dividends eligible for interest, dividends and capital gains deduction *(area E below)*			▷		(A)

2. Dividends Not Eligible for Interest, Dividends and Capital Gains Deduction—*include dividends received from a corporation not dealt with at arm's length* (Guide item 40)

Total dividends not eligible for interest, dividends and capital gains deduction			▷		
Taxable Amount of Dividends from Taxable Canadian Corporations *(Enter this amount on line 14 on page 1 of return)*					

B—Interest from Canadian Sources Eligible for Interest, Dividends and Capital Gains Deduction

Interest—Bonds, from Trust, Bank or other Deposits (specify)	BANK OF MONTREAL	50	00			
Interest from Mortgages, Notes and other Securities *(except interest received from a related person and from a partnership by a partner)*						
Eligible Annuity Payments (Guide item 10)						
Total Interest from Canadian Sources Eligible for Interest, Dividends and Capital Gains Deduction *(area E below)*		50	00	▷ 50	00	(B)

C—Other Investment Income Not Eligible for Interest, Dividends and Capital Gains Deduction

Other Canadian Investment Income (specify)						
Interest and Other Investment Income from Foreign Sources						
Total Other Investment Income Not Eligible for Interest, Dividends and Capital Gains Deduction				▷ 0		(C)
Total Interest and Other Investment Income *(Total of amounts (B) and (C)—enter on line 15 on page 1 of your return)*				50	00	

D—Carrying Charges (Guide item 28A)

Interest on money borrowed to earn Investment Income eligible for Interest, Dividends and Capital Gains Deduction			
Interest on money borrowed to earn other Investment Income			
Management or Safe Custody Fees			
Safety Deposit Box Charges			
Accounting Fees			
Investment Counsel Fees			
Other *(please specify)*			
Total Carrying Charges *(Enter this amount as 'Other deductions' on line 39 on page 2 of your return)*	0		(D)

E—Calculation of Interest, Dividends and Capital Gains Deduction (Guide item 40)

Total dividends eligible for interest, dividends and capital gains deduction *(amount (A) above)*			
Total interest from Canadian sources eligible for interest, dividends and capital gains deduction *(amount (B) above)*	50	00	
Eligible Taxable Capital Gains One-half of the Gains included in the amounts on lines 978, 980 and in amount (A) in the "Information Slips" area on Schedule 2 *(for the purpose of this calculation, capital losses should be excluded from these amounts)*			
Total of above three amounts	50	00	(E)
Subtract: Interest on money borrowed to earn income eligible for this deduction (Guide item 28A)	0		
Net amount eligible for interest, dividends and capital gains deduction	50	00	(F)

Interest, Dividends and Capital Gains Deduction *(Enter $1,000 or amount (F), whichever is less, on line 51 on page 2 of your return)*

52/ Exercise 1-A.

MANITOBA **TAX CREDIT PROGRAMS** T1C (MAN.)—1981

Calculation of Manitoba Cost of Living Tax Credit for 1981

	$	c	
Basic Credit: 3% of the total of the amounts on lines 45, 53 and 54 on page 2 of your return	95	10	(A)

Use this area if you are a married person at the end of 1981 and your spouse has agreed that only you will claim the Manitoba Cost of Living Tax Credit for the family.

	$	c
Enter 3% of the total of the amounts that are claimable by your spouse on lines 45, 53 and 54 on page 2 of your spouse's return		
Subtract: 3% of the amount claimed, if any, on line 42 on page 2 of your return		

	0		(B)
Total of above amounts (A) and (B)	95	10	(C)
Subtract: 1% of 'Family Income' (line 3 below)	75	72	
Manitoba Cost of Living Tax Credit—*If negative, enter zero*	19	38	(D)

Calculation of Family Income (If single, or spouse has no net income, enter zero at line 2 below)

My Net Income (line 41 on page 2 of my return)	1	7571	70
My spouse's Net Income (line 41 on my spouse's return—*If negative, enter zero*)	2	0	
Family Income (Add lines 1 and 2)	3	7571	70

Calculation of Manitoba Property Tax Credit for 1981

Total Rental Payments for 1981 in Manitoba ● ☐ X 20% =		
Net Property Taxes *paid* for 1981 in Manitoba ●		
Add: Resident Homeowner Tax Assistance (see instruction on back)—*If not received, enter zero*		
Occupancy Cost (total of above three lines) ●		(E)

Basic Credit of $525	525	00	
Senior Citizens—Add $100 if you were born in 1916 or earlier			
Sub-total			
Subtract: 1% of 'Family Income' (line 3 above)			
Total (minimum $325)			(F)
Total Manitoba Property Tax Credit—Enter Amount (E) or Amount (F), whichever is less			

Subtract: (a) Resident Homeowner Tax Assistance if received

(b) Shelter Allowance Program benefits received during 1981 *(see reverse)*

Net Manitoba Property Tax Credit *(If claimed, complete Declaration on reverse)*	0		(G)
Manitoba Cost of Living and Property Tax Credit—Add Amounts (D) and (G). If you did not have a Manitoba Political Contribution in 1981, enter this amount on line 74 of your return.	19	38	(H)

Calculation of Manitoba Political Contribution Tax Credit for 1981

Attach official receipts to this form *otherwise your claim will be rejected.*

Total Manitoba Political Contributions in 1981 ☐

Allowable credit—75% of first $100 of Total Contributions is		
50% of next $450 of Total Contributions is		
33⅓% of amount of Total Contributions exceeding $550 is		
Total allowable credit *(maximum $500)*	(i)	
Manitoba Tax Payable (from line 67 on your return)	(ii)	

ALLOWABLE MANITOBA POLITICAL CONTRIBUTION TAX CREDIT—Enter Amount (i), or Amount (ii), whichever is *less*		(I)
Manitoba Tax Credits—Total of Amounts (H) and (I)—Enter this amount on line 74 on your return.		

Certification

I certify that the information on this document is true and correct.

Sign here

Exercise 1-A.

4 Summary of Tax and Credits

There are two methods of tax calculation (see Guide item 51).

Taxable Income from line 62 on page 2 $ 4251 70

		$	¢
Federal Tax Payable from Tax Table in Guide or from line 63 on Schedule 1	63	407	00
Subtract: Federal Political Contribution Tax Credit from calculation on page 3	64		
Federal Tax Payable Before Business Investment Tax Credit		407	00
Subtract: Business Investment Tax Credit from form T2038(IND.) (Guide item 55)			
Federal Tax Payable Before Employment Tax Credit		407	00
Subtract: Employment Tax Credit Claimed from form T2208 (Guide item 56)	66		
Net Federal Tax Payable		407	00
Add: Provincial Tax Payable from Tax Table in Guide or from line 67 on Schedule 1	67	279	20
Canada Pension Plan Contribution Payable on Self-Employed Earnings from page 3	68		
Unemployment Insurance Benefit Repayment Payable from page 3 (Guide item 46)	69		
Total Payable		686	20

	$	¢
Total tax deducted per information slips	665	50
Provincial Tax Credits (Guide item 68)	19	38
Canada Pension Plan Overpayment (Guide item 19)		
Unemployment Insurance Overpayment (Guide item 20)		
Amounts paid by instalments		
Child Tax Credit (from Schedule 10)		
Total Credits	684	88

▷ 684 88

1 32

Please enter this difference in applicable space below.

A difference of less than $1.00 is neither charged nor refunded.

Refund $

Balance Due 1 32

Amount Enclosed 1 32

Please attach cheque or money order payable to the Receiver General. Do not mail cash. Payment is due not later than April 30, 1982.

Net Current Year Employment Credits $

Total Federal Political Contributions $

Tax Adjustments $

Foreign Taxes Paid $

Net Foreign Income $

Total Investment in Qualified Property $

If taxpayer is deceased, please give date of death

Day Month Year

Name and address of any individual or firm, other than the taxpayer, who has prepared this return for compensation.

Name Student's name

Address address

Telephone 666-6666

I hereby certify that the information given in this return and in any documents attached is true, correct and complete in every respect and fully discloses my income from all sources.

Please sign here

Date Telephone

Form authorized and prescribed by order of the Minister of National Revenue for purposes of Part I of the Income Tax Act, Part I of the Canada Pension Plan and Part VIII of the Unemployment Insurance Act, 1971.

It is a serious offence to make a false return.

Canadian Human Rights Act Federal Information Bank number 18805

Exercisi 2.

Revenue Canada Taxation   Revenu Canada Impôt

T1 GENERAL-1981

1981 Federal and Provincial Individual Income Tax Return

(ALL PROVINCES EXCEPT QUEBEC)

Identification

Family or Last Name (Please print): BROWN
Usual First Name and Initials (Please print): MARK
Present Address (Please print): 13 YORK AVENUE
Number, Street and Apt. No., or P.O. Box No. or R.R. No.
City: WINNIPEG
Province or Territory: MB.
Postal Code: R7G3H9
● Is this your first Income Tax return? Yes 1 ☑ No 2 ☐
If 'No', please state year for which last return filed. 19
Name on last return: same as above ☐ or
Address on last return: same as above ☐ or

◆ Social Insurance Number: 222222222
As on your Social Insurance Number card
● Date of Birth: 14 (Day) 09 (Month) 65 (Year)
◆ Province or Territory of Residence on December 31, 1981, was: MANITOBA.
◆ If self-employed in 1981, please state province where business located:
◆ On December 31, 1981, I was: Married 1 ☐ Widow(er) 2 ☐ Divorced 3 ☐ Separated 4 ☐ Single 5 ☑
● Usual First Name of Spouse
Address of Spouse: same as mine ☐ or
◆ Spouse's Social Insurance Number
◆ If you became or ceased to be a resident of Canada in 1981, please give:
Date of Entry 1 Day Month or Departure 2 Day Month
Type of work or occupation in 1981: WAITER
Name of present employer: PARKER'S RESTAURANT.

Calculation of Total Income

					$	c
Income from Employment	Total Earnings Before Deductions from Box C on all T4 slips (attach copy 2 of T4 slips)				2230	00
	Commissions from Box L on all T4 slips, included in above total					
	Other employment income including adult training allowances, tips and gratuities, etc. (Guide item 3; please specify) TIPS.				350	00
	Total employment earnings (add lines 01 and 03)	04			2580	00
	Subtract: Employment expense deduction (Guide item 4) If line 04 above is $16,667 or more claim $500.00 If less, claim 3% of line 04		77	40		
	Other allowable expenses (Guide item 5; please specify)					
	Total employment expenses (add lines 05 and 06)	07	77	40	0 77	40
	Net employment earnings (subtract line 07 from line 04)	08			2502	60
Pension Income	Old Age Security Pension (attach copy 2 of T4A(OAS) slip)					
	Canada or Quebec Pension Plan benefits (attach copy 2 of T4A(P) slip)					
	Other pensions or superannuation (attach copy 3 of T4A slips)					
Income from Other Sources	Taxable Family Allowance payments (Guide item 7; attach copy of TFA1 slip)					
	Unemployment Insurance benefits (attach copy 2 of T4U slip)					
	Taxable amount of dividends from taxable Canadian corporations (attach completed Schedule 4)					
	Interest and other investment income (attach completed Schedule 4)					
	Rental income (Schedule 7) Gross / Net					
	Taxable capital gains (Allowable capital losses) — complete and attach Schedule 2	17				
	Other income (Guide item 17; please specify)					
Income from Self-Employment	Report both 'Gross' and 'Net'. (Guide item 18). Provide other information concerning self-employment on page 3.					
	Business income Gross / Net					
	Professional income Gross / Net					
	Commission income Gross / Net					
	Farming income Gross / Net					
	Fishing income Gross / Net					
Total Income	(add lines 08 to 23 inclusive — please enter this amount on line 24 on page 2)	24			2502	60
					0 2502	[illegible]

Please do not use this area   Please do not use this area

2 Calculation of Taxable Income

	Line	$	¢	$	¢
Total Income (from line 24 on page 1)	24			2502	60

Deductions from Total Income

		$	¢	
Canada or Quebec Pension Plan contributions (Guide item 19)				
Contributions through employment from Box D on all T4 slips (maximum $239.40)	●			● ⊙
Contribution payable on self-employed earnings (from page 3)	●			●
Unemployment Insurance premiums from Box E on all T4 slips (maximum $294.84; Guide item 20)	●	36	45	● ⊙
Registered pension plan contributions (Guide item 21)	●			⊙
Registered retirement savings plan premiums (Guide item 22; attach receipts)	●			⊙
Registered home ownership savings plan contributions (Guide item 23; attach receipts)	●			⊙
Annual union, professional or like dues (Guide item 24; attach receipts)	●			⊙
Tuition fees—claimable by student only (Guide item 25; attach receipts)	●	20	00	⊙
Child care expenses (complete and attach Schedule 5)	●			⊙
Allowable business investment losses (Guide item 27)	●			⊙
Other deductions (Guide item 28; please specify)	●			⊙

	Line	$	¢		$	¢
Add lines 25 to 39 inclusive	40	56	45	D	56	45
Net Income (subtract line 40 from line 24)	41				2446	15

Claim for Personal Exemptions

		$	¢
Basic Personal Exemption	Claim $3,170.00	3170	00
Age Exemption—If you were born in 1916 or earlier If you did not receive the Old Age Security Pension, attach a letter giving reasons.	Claim $1,980.00		

Married Exemption (Guide items 31 and 32)—If applicable, please check ☑ box 1. or 2.

Married on or before December 31, 1981, and supported spouse in 1981

			$	¢		$	¢
1. whose net income in that year, while married, was not over $490.	1. ☐	Claim $2,780.00			●		
2. whose net income in that year, while married, was over $490. but not over $3,270.	2. ☐		3,270	00			
		Subtract: spouse's net income while married					
If you became married in 1981, please give date of marriage		Claim					

Exemption for Wholly Dependent Children *See Guide item 34.*
Provide details below and claim according to child's age and net income. Do not claim here for a child you have claimed on Schedule 6. See Guide item 34 if child's net income exceeds limit.
Children born in 1964 or later—Claim $590 for each child whose net income was not over $2,090.
Children born in 1963 or earlier—Claim $1,090 for each child whose net income was not over $2,180 and who, if born in 1959 or earlier, was in full-time attendance at a school or university or was infirm.

Name of child (attach list if space insufficient)	*Relationship to you*	*Date of birth of child Day*	*Month*	*Year*	*If born in 1959 or earlier state whether infirm or school attended*	*Net income in 1981 $*	*Claim*	

		$	¢		$	¢		$	¢
Total claim for wholly dependent children	●			D					
Additional Personal Exemptions from Schedule 6 attached				●					
Total Personal Exemptions (add above items)				●	3170	00	D	3170	00
Subtract line 45 from line 41							46	-0-	

Other deductions from Net Income

		$	¢		$	¢	
Standard deduction—Claim $100 (no receipts required) or total at line 50 below, but not both				47	100	00	⊙
Medical expenses—(attach receipts and completed Schedule 9)	●						⊙
Subtract: 3% of 'Net Income' (line 41 above)							
Allowable portion of medical expenses							
Add: Charitable donations (attach receipts)	●						⊙
Total *(If this amount is greater than $100, enter on line 47 above)*	50						
Interest, dividends and capital gains deduction (Guide item 40; attach completed Schedule 4)				●			⊙
Pension income deduction (Guide item 41)				●			⊙
Deduction for blind persons or persons confined to a bed or wheelchair (Guide item 42) Claim relates to: Self ☐ or dependant other than spouse (specify)				●			⊙
Education deduction (Guide item 43; attach completed form T2202 or T2202A)				●			⊙
Eligible deductions transferred from spouse (Guide item 44; attach completed Schedule 3)				●			⊙
Gifts to Canada or a province (Guide item 45; attach receipts)				●			⊙
Unemployment Insurance benefit repayment payable from page 3 (Guide item 46)				●			● ⊙
Non-capital losses of other years (Guide item 48)				●			⊙
Capital losses of other years (1972 to 1980) (Guide item 49)				●			⊙

	Line	$	¢		$	¢
Add lines 47, 51 to 60 inclusive	61	100	00	D	100	00
Taxable Income (subtract line 61 from line 46—enter this amount on page 4)	●				-0-	

Exercise 2.

MANITOBA TAX CREDIT PROGRAMS

T1C (MAN.)–1981

Calculation of Manitoba Cost of Living Tax Credit for 1981

	$	¢	
Basic Credit: 3% of the total of the amounts on lines 45, 53 and 54 on page 2 of your return	95	10	(A)

Use this area if you are a married person at the end of 1981 and your spouse has agreed that only you will claim the Manitoba Cost of Living Tax Credit for the family.

	$	¢
Enter 3% of the total of the amounts that are claimable by your spouse on lines 45, 53 and 54 on page 2 of your spouse's return		
Subtract: 3% of the amount claimed, if any, on line 42 on page 2 of your return		

	0		(B)
Total of above amounts (A) and (B)	95	10	(C)
Subtract: 1% of 'Family Income' (line 3 below)	24	46	
Manitoba Cost of Living Tax Credit—*If negative, enter zero*	70	64	(D)

Calculation of Family Income (If single, or spouse has no net income, enter zero at line 2 below)

My Net Income (line 41 on page 2 of my return)	1	2446	15
My spouse's Net Income (line 41 on my spouse's return—*If negative, enter zero*)	2	0	
Family Income (Add lines 1 and 2)	3	2446	15

Calculation of Manitoba Property Tax Credit for 1981

Total Rental Payments for 1981 in Manitoba ● ☐ X 20% =			
Net Property Taxes *paid* for 1981 in Manitoba ●			
Add: Resident Homeowner Tax Assistance (see instruction on back)—*If not received, enter zero*			
Occupancy Cost (total of above three lines) ●			(E)
Basic Credit of $525	525	00	
Senior Citizens—Add $100 if you were born in 1916 or earlier			
Sub-total			
Subtract: 1% of 'Family Income' (line 3 above)			
Total (minimum $325)			(F)
Total Manitoba Property Tax Credit—Enter Amount (E) or Amount (F), whichever is less			

Subtract: (a) Resident Homeowner Tax Assistance if received

(b) Shelter Allowance Program benefits received during 1981 *(see reverse)*

Net Manitoba Property Tax Credit *(If claimed, complete Declaration on reverse)*	0		(G)
Manitoba Cost of Living and Property Tax Credit—Add Amounts (D) and (G). If you did not have a Manitoba Political Contribution in 1981, enter this amount on line 74 of your return.	70	64	(H)

Calculation of Manitoba Political Contribution Tax Credit for 1981

Attach official receipts to this form *otherwise your claim will be rejected.*

Total Manitoba Political Contributions in 1981

Allowable credit—75% of first $100 of Total Contributions is		
50% of next $450 of Total Contributions is		
33⅓% of amount of Total Contributions exceeding $550 is		
Total allowable credit *(maximum $500)*	(i)	
Manitoba Tax Payable (from line 67 on your return)	(ii)	
ALLOWABLE MANITOBA POLITICAL CONTRIBUTION TAX CREDIT—Enter Amount (i), or Amount (ii), whichever is *less*		(I)
Manitoba Tax Credits—Total of Amounts (H) and (I)—enter this amount on line 74 on your return.		

Certification

I certify that the information on this document is true and correct.

Sign here

Exercise 2.

4 Summary of Tax and Credits

There are two methods of tax calculation (see Guide item 51).

Taxable Income from line 62 on page 2 $ 0

		$	c
Federal Tax Payable from Tax Table in Guide or from line 63 on Schedule 1	63	0	
Subtract: Federal Political Contribution Tax Credit from calculation on page 3	64		
Federal Tax Payable Before Business Investment Tax Credit		0	
Subtract: Business Investment Tax Credit from form T2038(IND.) (Guide item 55)	●		
Federal Tax Payable Before Employment Tax Credit		0	
Subtract: Employment Tax Credit Claimed from form T2208 (Guide item 56)	66		
Net Federal Tax Payable		0	
Add: Provincial Tax Payable from Tax Table in Guide or from line 67 on Schedule 1	67	0	
Canada Pension Plan Contribution Payable on Self-Employed Earnings from page 3	68		
Unemployment Insurance Benefit Repayment Payable from page 3 (Guide item 46)	69		
Total Payable	●	0	

Net Current Year Employment Credits $

Total Federal Political Contributions $

Tax Adjustments $

Foreign Taxes Paid $

Net Foreign Income $

Total Investment in Qualified Property $

$

$

$

If taxpayer is deceased, please give date of death

Day Month Year

	$	c
Total tax deducted per information slips	45	10
Provincial Tax Credits (Guide item 68)	70	64
Canada Pension Plan Overpayment (Guide item 19)		
Unemployment Insurance Overpayment (Guide item 20)		
Amounts paid by instalments		
Child Tax Credit (from Schedule 10)		
Total Credits	115	74

Total Credits 115 74

Please enter this difference in applicable space below. 115 74

A difference of less than $1.00 is neither charged nor refunded.

Refund 115 74

Balance Due

Amount Enclosed

Please attach cheque or money order payable to the Receiver General. Do not mail cash. Payment is due not later than April 30, 1982.

Name and address of any individual or firm, other than the taxpayer, who has prepared this return for compensation.

Name Students name

Address address

Telephone 666-6666

I hereby certify that the information given in this return and in any documents attached is true, correct and complete in every respect and fully discloses my income from all sources.

Please sign here

Date Telephone

Form authorized and prescribed by order of the Minister of National Revenue for purposes of Part I of the Income Tax Act, Part I of the Canada Pension Plan and Part VIII of the Unemployment Insurance Act, 1971.

It is a serious offence to make a false return.

Canadian Human Rights Act Federal Information Bank number 15605

Exercise 2A.

T1 GENERAL-1981

Revenue Canada Taxation
Revenu Canada Impôt

1981 Federal and Provincial Individual Income Tax Return

(ALL PROVINCES EXCEPT QUEBEC)

Identification

Family or Last Name (Please print) Mr. Mrs. Miss Ms.: BROWN
Usual First Name and Initials (Please print): MARK
Present Address (Please print): 13 YORK AVENUE
Number, Street and Apt. No., or P.O. Box No. or R.R. No.
City: BRANDON
Province or Territory: MB.
Postal Code:

● Is this your first Income Tax return? Yes 1 ☑ No 2 ☐
If 'No', please state year for which last return filed. 19
Name on last return: same as above ☐ or
Address on last return: same as above ☐ or

◆ Social Insurance Number: 222222222
As on your Social Insurance Number card
● Date of Birth: Day 14 Month 09 Year 61.
◆ Province or Territory of Residence on December 31, 1981, was: MANITOBA
◆ If self-employed in 1981, please state province where business located:
◆ On December 31, 1981, I was: Married 1 ☐ Widow(er) 2 ☐ Divorced 3 ☐ Separated 4 ☐ Single 5 ☑
● Usual First Name of Spouse
Address of Spouse: same as mine ☐ or
◆ Spouse's Social Insurance Number
◆ If you became or ceased to be a resident of Canada in 1981, please give:
Date of Entry 1 Day Month or Departure 2 Day Month
Type of work or occupation in 1981: WAITER
Name of present employer: STOP OVER MOTEL.

Calculation of Total Income

				$	¢
Income from Employment	Total Earnings Before Deductions from Box C on all T4 slips (attach copy 2 of T4 slips)			9500	00
	Commissions from Box L on all T4 slips, included in above total				
	Other employment income including adult training allowances, tips and gratuities, etc. (Guide item 3; please specify)			400	00
	Total employment earnings (add lines 01 and 03)		04	9900	00
	Subtract: Employment expense deduction (Guide item 4) If line 04 above is $16,667 or more claim $500.00 If less, claim 3% of line 04	297 00			
	Other allowable expenses (Guide item 5; please specify)				
	Total employment expenses (add lines 05 and 06)	297 00	07	D 297	00
	Net employment earnings (subtract line 07 from line 04)		08	9603	00
Pension Income	Old Age Security Pension (attach copy 2 of T4A(OAS) slip)				
	Canada or Quebec Pension Plan benefits (attach copy 2 of T4A(P) slip)				
	Other pensions or superannuation (attach copy 3 of T4A slips)				
Income from Other Sources	Taxable Family Allowance payments (Guide item 7; attach copy of TFA1 slip)				
	Unemployment Insurance benefits (attach copy 2 of T4U slip)				
	Taxable amount of dividends from taxable Canadian corporations (attach completed Schedule 4)				
	Interest and other investment income (attach completed Schedule 4)			75	00
	Rental income (Schedule 7) Gross		Net		
	Taxable capital gains (Allowable capital losses)—complete and attach Schedule 2		17		
	Other income (Guide item 17; please specify)				
Income from Self-Employment	Report both 'Gross' and 'Net'. (Guide item 18). Provide other information concerning self-employment on page 3.				
	Business income Gross		Net		
	Professional income Gross		Net		
	Commission income Gross		Net		
	Farming income Gross		Net		
	Fishing income Gross		Net		
Total Income	(add lines 08 to 23 inclusive -- please enter this amount on line 24 on page 2)		24	9678	00

D 9678

Please do not use this area

Please do not use this area

2 Calculation of Taxable Income

	Line	$	c	$	c
Total Income (from line 24 on page 1)	24			9678	00

Deductions from Total Income

	$	c		$	c
Canada or Quebec Pension Plan contributions (Guide item 19)					
Contributions through employment from Box D on all T4 slips (maximum $239.40)	125	00			
Contribution payable on self-employed earnings (from page 3)					
Unemployment Insurance premiums from Box E on all T4 slips (maximum $294.84; Guide item 20)	92	75			
Registered pension plan contributions (Guide item 21)	500	00			
Registered retirement savings plan premiums (Guide item 22; attach receipts)					
Registered home ownership savings plan contributions (Guide item 23, attach receipts)					
Annual union, professional or like dues (Guide item 24; attach receipts)					
Tuition fees—claimable by student only (Guide item 25; attach receipts)	75	00			
Child care expenses (complete and attach Schedule 5)					
Allowable business investment losses (Guide item 27)					
Other deductions (Guide item 28; please specify)	13	00			
Add lines 25 to 39 inclusive 40	805	75	▷	805	75
Net Income (subtract line 40 from line 24) 41				8872	25

Claim for Personal Exemptions

	$	c
Basic Personal Exemption Claim $3,170.00	3170	00
Age Exemption—If you were born in 1916 or earlier Claim $1,980.00		

If you did not receive the Old Age Security Pension, attach a letter giving reasons.

Married Exemption (Guide items 31 and 32)—If applicable, please check ☑ box 1. or 2.

Married on or before December 31, 1981, and supported spouse in 1981

1. whose net income in that year, while married, was not over $490 1. ☐ Claim $2,780.00

2. whose net income in that year, while married, was over $490 but not over $3,270. 2. ☐ 3,270 00

Subtract: spouse's net income while married

If you became married in 1981, please give date of marriage

Claim

Exemption for Wholly Dependent Children *See Guide item 34*

Provide details below and claim according to child's age and net income. Do not claim here for a child you have claimed on Schedule 6. See Guide item 34 if child's net income exceeds limit.

Children born in 1964 or later—Claim $590 for each child whose net income was not over $2,090.

Children born in 1963 or earlier—Claim $1,090 for each child whose net income was not over $2,180 and who, if born in 1959 or earlier, was in full-time attendance at a school or university or was infirm.

Name of child (attach list if space insufficient)	*Relationship to you*	*Date of birth of child Day*	*Month*	*Year*	*If born in 1959 or earlier state whether infirm or school attended*	*Net income in 1981 $*	*Claim*	

	$	c		$	c
Total claim for wholly dependent children			▷		
Additional Personal Exemptions from Schedule 6 attached					
Total Personal Exemptions (add above items)	3170	00	▷	3170	00
Subtract line 45 from line 41 46				5702	25

Other deductions from Net Income

	$	c
Standard deduction—Claim $100 (no receipts required) or total at line 50 below, but not both 47	533	83

	$	c
Medical expenses—(attach receipts and completed Schedule 9)	800	00
Subtract: 3% of 'Net Income' (line 41 above)	266	17
Allowable portion of medical expenses	533	83
Add: **Charitable donations** (attach receipts)	0	
Total *(If this amount is greater than $100, enter on line 47 above)* 50	533	83

	$	c		$	c
Interest, dividends and capital gains deduction (Guide item 40; attach completed Schedule 4)	75	00			
Pension income deduction (Guide item 41)					
Deduction for blind persons or persons confined to a bed or wheelchair (Guide item 42) Claim relates to: Self ☐ or dependent other than spouse (specify)					
Education deduction (Guide item 43; attach completed form T2202 or T2202A)					
Eligible deductions transferred from spouse (Guide item 44; attach completed Schedule 3)					
Gifts to Canada or a province (Guide item 45; attach receipts)					
Unemployment Insurance benefit repayment payable from page 3 (Guide item 46)					
Non-capital losses of other years (Guide item 48)					
Capital losses of other years (1972 to 1980) (Guide item 49)					
Add lines 47, 51 to 60 inclusive 61	608	83	▷	608	83
Taxable Income (subtract line 61 from line 46—enter this amount on page 4)				5093.	42

Exercise 2A

T1–1981

Schedule 4—Statement of Investment Income (Guide items 8 to 13)

State names of payers in appropriate areas and enclose any information slips received. If space below is insufficient attach statements.

A—Taxable Amount of Dividends from Taxable Canadian Corporations (from Boxes H and I on T3 slips or Boxes B and F on T5 slips)

Include amounts credited through banks, trust companies, brokers and estates.

1. **Dividends Eligible for Interest, Dividends and Capital Gains Deduction**—*do not include dividends received from a corporation not dealt with at arm's length* (Guide item 40)

	$	c	$	c	
Total dividends eligible for interest, dividends and capital gains deduction *(area E below)*			0		(A)

2. **Dividends Not Eligible for Interest, Dividends and Capital Gains Deduction**—*include dividends received from a corporation not dealt with at arm's length* (Guide item 40)

	$	c	$	c	
Total dividends not eligible for interest, dividends and capital gains deduction			0		
Taxable Amount of Dividends from Taxable Canadian Corporations *(Enter this amount on line 14 on page 1 of return)*					

B—Interest from Canadian Sources Eligible for Interest, Dividends and Capital Gains Deduction

		$	c	$	c	
Interest—Bonds, from Trust, Bank or other Deposits (specify)	BANK OF NOVA SCOTIA	75	00			
Interest from Mortgages, Notes and other Securities *(except interest received from a related person and from a partnership by a partner)*						
Eligible Annuity Payments (Guide item 10)						
Total Interest from Canadian Sources Eligible for Interest, Dividends and Capital Gains Deduction *(area E below)*		75	00	0 75	00	(B)

C—Other Investment Income Not Eligible for Interest, Dividends and Capital Gains Deduction

		$	c	$	c	
Other Canadian Investment Income (specify)						
Interest and Other Investment Income from Foreign Sources						
Total Other Investment Income Not Eligible for Interest, Dividends and Capital Gains Deduction				0 0		(C)
Total Interest and Other Investment Income *(Total of amounts (B) and (C)—enter on line 15 on page 1 of your return)*				75	00	

D—Carrying Charges (Guide item 28A)

	$	c	
Interest on money borrowed to earn investment income eligible for Interest, Dividends and Capital Gains Deduction			
Interest on money borrowed to earn other investment income			
Management or Safe Custody Fees			
Safety Deposit Box Charges	13	00	
Accounting Fees			
Investment Counsel Fees			
Other *(please specify)*			
Total Carrying Charges *(Enter this amount as 'Other deductions' on line 39 on page 2 of your return)*	13	00	(D)

E—Calculation of Interest, Dividends and Capital Gains Deduction (Guide item 40)

	$	c	
Total dividends eligible for interest, dividends and capital gains deduction *(amount (A) above)*			
Total interest from Canadian sources eligible for interest, dividends and capital gains deduction *(amount (B) above)*	75	00	
Eligible Taxable Capital Gains One-half of the Gains included in the amounts on lines 978, 980 and in amount (A) in the "Information Slips" area on Schedule 2 *(for the purpose of this calculation, capital losses should be excluded from these amounts)*			
Total of above three amounts	75	00	(E)
Subtract: Interest on money borrowed to earn income eligible for this deduction (Guide item 28A)	0		
Net amount eligible for interest, dividends and capital gains deduction	75	0	(F)

Interest, Dividends and Capital Gains Deduction *(Enter $1,000 or amount (F), whichever is less, on line 51 on page 2 of your return)*

61 Exercise 2 A.

MANITOBA TAX CREDIT PROGRAMS

T1C (MAN.)—1981

Calculation of Manitoba Cost of Living Tax Credit for 1981

	$	¢	
Basic Credit: 3% of the total of the amounts on lines 45, 53 and 54 on page 2 of your return	95	10	(A)

Use this area if you are a married person at the end of 1981 and your spouse has agreed that only you will claim the Manitoba Cost of Living Tax Credit for the family.

	$	¢		
Enter 3% of the total of the amounts that are claimable by your spouse on lines 45, 53 and 54 on page 2 of your spouse's return				
Subtract: 3% of the amount claimed, if any, on line 42 on page 2 of your return			0	(B)
Total of above amounts (A) and (B)			95 10	(C)
Subtract: 1% of 'Family Income' (line 3 below)			88 72	
Manitoba Cost of Living Tax Credit—*If negative, enter zero*			6 38	(D)

Calculation of Family Income (If single, or spouse has no net income, enter zero at line 2 below)

		$	¢
My Net Income (line 41 on page 2 of my return)	1	8872	25
My spouse's Net Income (line 41 on my spouse's return—*If negative, enter zero*)	2	0	
Family Income (Add lines 1 and 2)	3	8872	25

Calculation of Manitoba Property Tax Credit for 1981

Total Rental Payments for 1981 in Manitoba ● ☐ X 20% =			
Net Property Taxes *paid* for 1981 in Manitoba ●			
Add: Resident Homeowner Tax Assistance (see instruction on back)—*If not received, enter zero*			
Occupancy Cost (total of above three lines) ●			(E)
Basic Credit of $525	525	00	
Senior Citizens—Add $100 if you were born in 1916 or earlier			
Sub-total			
Subtract: 1% of 'Family Income' (line 3 above)			
Total (minimum $325)			(F)
Total Manitoba Property Tax Credit—Enter Amount (E) or Amount (F), whichever is less			
Subtract: (a) Resident Homeowner Tax Assistance if received			
(b) Shelter Allowance Program benefits received during 1981 *(see reverse)*			

Net Manitoba Property Tax Credit *(If claimed, complete Declaration on reverse)*	0		(G)
Manitoba Cost of Living and Property Tax Credit—Add Amounts (D) and (G). If you did not have a Manitoba Political Contribution in 1981, enter this amount on line 74 of your return.	6.	38	(H)

Calculation of Manitoba Political Contribution Tax Credit for 1981

Attach official receipts to this form *otherwise your claim will be rejected.*

Total Manitoba Political Contributions in 1981 ☐

Allowable credit—75% of first $100 of Total Contributions is			
50% of next $450 of Total Contributions is			
33⅓% of amount of Total Contributions exceeding $550 is			
Total allowable credit *(maximum $500)*	(i)		
Manitoba Tax Payable (from line 67 on your return)	(ii)		
ALLOWABLE MANITOBA POLITICAL CONTRIBUTION TAX CREDIT—Enter Amount (i), or Amount (ii), whichever is *less*			(I)
Manitoba Tax Credits—Total of Amounts (H) and (I)—Enter this amount on line 74 on your return.			

Certification

I certify that the information on this document is true and correct.

Sign here

Exercise 2A.

4 Summary of Tax and Credits

There are two methods of tax calculation (see Guide item 51).

Taxable Income from line 62 on page 2 $ 5093 42

		$	¢
Federal Tax Payable from Tax Table in Guide or from line 63 on Schedule 1	63	55[illegible]	00
Subtract: Federal Political Contribution Tax Credit from calculation on page 3	64		
Federal Tax Payable Before Business Investment Tax Credit		558	00
Subtract: Business Investment Tax Credit from form T2038(IND.) (Guide item 55)	●		
Federal Tax Payable Before Employment Tax Credit		558	00
Subtract: Employment Tax Credit Claimed from form T2208 (Guide item 56)	66		
Net Federal Tax Payable		558	00
Add: Provincial Tax Payable from Tax Table in Guide or from line 67 on Schedule 1	67	348	80
Canada Pension Plan Contribution Payable on Self-Employed Earnings from page 3	68		
Unemployment Insurance Benefit Repayment Payable from page 3 (Guide item 46)	69		
Total Payable	●	906	80

		$	¢
Total tax deducted per information slips	●	735	80
Provincial Tax Credits (Guide item 68)	●	6	38
Canada Pension Plan Overpayment (Guide item 19)	●		
Unemployment Insurance Overpayment (Guide item 20)	●		
Amounts paid by instalments	●		
Child Tax Credit (from Schedule 10)	●		
Total Credits		742	18

Total Credits ▷ 742 18

Please enter this difference in applicable space below. 164 62

A difference of less than $1.00 is neither charged nor refunded.

Refund ● $ ______

Balance Due ● 164 42

Amount Enclosed 164 42

Please attach cheque or money order payable to the Receiver General. Do not mail cash. Payment is due not later than April 30, 1982.

Net Current Year Employment Credits $

Total Federal Political Contributions $

Tax Adjustments $

Foreign Taxes Paid $

Net Foreign Income $

Total Investment in Qualified Property $

If taxpayer is deceased, please give date of death

Day Month Year

Name and address of any individual or firm, other than the taxpayer, who has prepared this return for compensation.

Name Student's Signature

Address address

Telephone 666.6666

Form authorized and prescribed by order of the Minister of National Revenue for purposes of Part I of the Income Tax Act, Part I of the Canada Pension Plan and Part VIII of the Unemployment Insurance Act, 1971.

I hereby certify that the information given in this return and in any documents attached is true, correct and complete in every respect and fully discloses my income from all sources.

Please sign here

Date Telephone

It is a serious offence to make a false return.

Canadian Human Rights Act Federal Information Bank number 15605

C.1,C.2 1. a) $7.62
b) $768.00
c) $85.00
d) $14.73
e) $2800.00
f) $1216.00
g) $35.20
h) $65.21
i) $42.50
j) $283.50

2. a) $39
b) $73
c) $4000
d) $2199.78
e) 16%
f) $3780
g) 146 days
h) 9 months
i) 18%
j) $1200

3. 4 months
4. $255
5. 4 years
6. 17%
7. $1300
8. 15%
9. 18%
10. $2150

C.3 1. a) $1000 × .14 = $1140.00
$1140 × .14 = 159.60
$1299.60
b) $665.50
c) $2645.00
d) $978.28
e) $17 280

2. a) $500 for 1 year @ 18% = 2 times @ 9%
.09 × 500 = 545.00
.09 × 545 = 49.05
594.05
b) $5124.35

C.4 1. a) $530.10
b) $8926.45
c) $741.78
d) $1664.00
e) $4338.24
f) $2932.89
g) $4804.83
h) $6447.18
i) $1963.75
j) $2093.20

2. a) $534.03
b) $503.55
c) $1142.23
d) $3501.12
e) $5652.45
f) $3153.72
g) $2708.79
h) $2478.21
i) $2131.55
j) $1976.67

D.1 Sheet 1

1. a) $15 + (7.50 x 8=)60 = $75 Installment price
   $75 - 60.20 = 14.80 Carrying charge
   b) $170; $34.01 d) $169; $19.01
   c) $1060; $221.21 e) $268; $42.51
2. $1080; $80.01
3. $750; $100.01
4. $1425; $175.00

D.1 Sheet 2

1. a) 8 + (7 x 6=)42 = $50.00 Installment price
   50 - 35.49 = $14.51 Carrying charge
   14.51/35.49 x 100 = 40.9% Percent rate excess
   b) $111.00; $9.62; 9.5%
   c) $1140.00; $150.01; 15.2%
   d) $85.00; $10.01; 13.3%
   e) $110.00; $11.01; 11.1%
   f) $820.00; $133.51; 19.4%
   g) $181.00; $31.01; 20.7%
2. 14.0%
3. $411; $61.01; 17.4%

D.2,a,b

1. 24%
2. 21%
3. 18%
4. $5.69
5. $11.92
6. $5.82
7. $9.90
8. Nil

D.2,c

1. Interest: .0175 x 600 = 10.50
   600.00 + 10.50 = 610.50 ending balance
   5% of 610.50 = $30.53 minimum payment
2. $10.00
3. $36.50
4. a) $10.00
   b) $16.35

D.2,d

1. a) $162.05 + (.0175 x 162.05=)2.84 = 164.89 + 29.30 = 194.19 x .05 = $9.71. As this is less than the acceptable minimum payment, $10 must be paid.
   b) $20.23 d) $29.42
   c) $10.00 e) $43.29
2. $25.28
3. Int. = $6.03; New Balance = $370.41; Payment = $22.22
4. $25.51
5. $10.00

D.2,e

1. a) \$97.76 - 40.00 = 57.76; 1.75% x 57.76 = 1.01
   57.76 + 1.01 + 21.76 = 80.53 ending balance
   5% x 80.53 = 4.03 which is less than the acceptable minimum, therefore, \$10 must be paid.
   b) \$120.57; \$2.41; \$212.46; \$10.62
   c) \$284.98; \$5.56; \$429.83; \$21.49
   d) \$113.51; \$2.04; \$192.92; \$10.00
2. \$18.12
3. a) Int. = \$6.81; New Balance = \$401.08; Min. Payment = \$20.05
   b) \$10.32
   c) \$16.37
   d) \$10.00

C.II. GEOMETRY

A.1

1. a) Draw a circle (with a compass) whose radius is 6.5 cm and centre is at a point C.

   b) In the same circle, draw any diameter, label its end points A and B. What is its length?

   c) With centre A, radius 5 cm, draw an arc, intersecting the circle at P. Join A and P. What is the length of the chord $\overline{AP}$?

   d) Join B and P. What is the length of the chord $\overline{BP}$? (by measurement)

2. a) Draw a circle with centre at a point R with radius 2.5 cm.

   b) Draw two chords (preferably not diameters) and name tham $\overline{AB}$ and $\overline{CD}$.

   c) Construct the perpendicular bisectors of $\overline{AB}$ and $\overline{CD}$.

   d) At what point do these bisectors intersect?

3. a) Trace a circle (use drink cup, plate, etc.).

   b) Find the centre of this circle by the method of #2.

A.2

Necessary Materials: Several circular objects, e.g., cups of different sizes, jars, jar tops, cans, glasses, etc.

1. Measure the circumference of each object (use string or cloth tape measure).
2. Trace each object on paper and find the centres of each.
3. Draw a diameter for each circle.
4. Measure each diameter.
5. Complete the following table.

Object	Diameter	Circumference	Circumference/Diameter

6. In each case Circumference/Diameter $\approx 3.14\ldots$
$= \pi$

Therefore $C = \pi d$

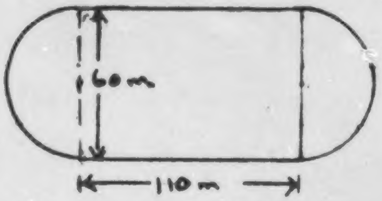
a) Determine the circumference of a circle whose diameter is 5 cm.

b) Determine the circumference of a circle whose radius is 6 cm.

c) Determine the diameter of a circle whose circumference is 25 cm.

7. Determine the distance around a circular track if the radius is 200 m.

8. How far would you run if you did 5 laps around the track illustrated? The ends of the track are semicircles.



9. If the minute hand of a wall clock is 20 cm long, how far does the tip travel in 1/2 hour?

10. A circular pool is to be surrounded by a fence 1 m from the pool's edge. If the pool's diameter is 7 m, how many metres of fencing would be required?

A.3 1. Determine the area of a circle whose radius is 5 cm.

2. Determine the area of a circle whose diameter is 12 cm.

3. Determine the diameter of a circle whose area is 25 m^2.

4. A frying pan has a diameter of 20 cm. What is the cooking area of the pan.

5. A small pizza with a diameter of 25 cm costs $5.99, and a large pizza with a diameter of 35 cm costs $9.99. By calculating the cost/cm^2, determine which is the better buy.

6. How much more/less cooking surface does a 20 cm square pan have than a circular pan with a radius of 12 cm?

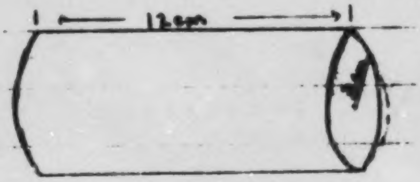
7. A contractor charges $5.50/$m^2$ to put in concrete walks. If you wanted to put a 1 m walk around a circular pool whose diameter was 12 m, how much would the contractor charge?

A.4

1. Calculate the outside surface area of a can, excluding top and bottom, if the diameter of the can is 12 cm and the height is 15 cm.

2. If a can has a circumference of 30 cm and a height of 15 cm, calculate the outside surface area (exclude top and bottom).

3. What is the surface area of the can illustrated (top and bottom included).



4. Find the area of flat rolled steel needed to make a pipe 15 m long and .5 m in diameter.

5. A cylindrical water tower is to be painted at a cost of $4.50/m^2. How much would it cost if the tower was 12 m in diameter and 20 m high? (Include only top of tower.)

6. If you had a sheet of 20 cm x 10 cm aluminum which was to be rolled to make a cylinder 10 cm long, what would be the diameter of the cylinder?

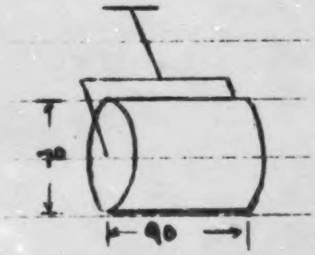
A.5

1. Calculate the volume of a cylinder whose radius is 14 cm and whose height is 20 cm.

2. If a cylindrical drum has a height of 0.9 m and a base area of 0.3 m^2, what is the volume of the drum?

3. A cylindrical pillar is to have a height of 5 m and a diameter of 0.75 m. How much concrete would be needed to build 5 such pillars?

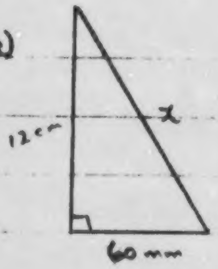
4. A lawn roller is to be filled with water. How many litres of water must be used to fill a roller which is 90 cm wide and has a diameter of 70 cm (1000 cm^3=1 litre of water).



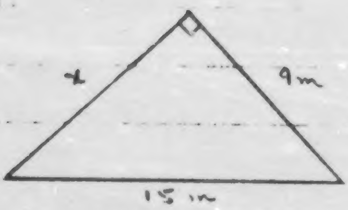
5. A small cylinder 10 cm long and 5 cm in diameter is completely immersed into a larger cylinder 20 cm long and 10 cm in diameter. The water level in the large cylinder comes exactly to its brim without any overflow. How much water was originally in the large cylinder?

B.1 1. In which of the questions can X be determined by use of the Pythagorean Theorem.

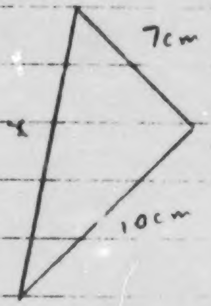
a)



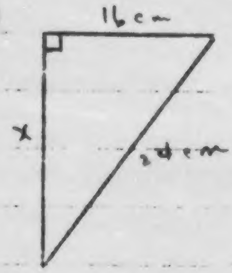
b)



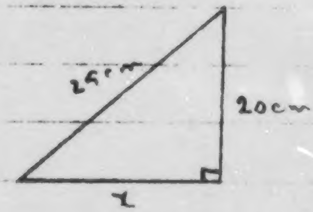
c)



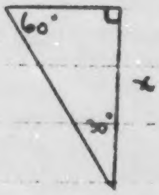
d)



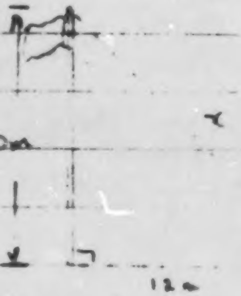
e)



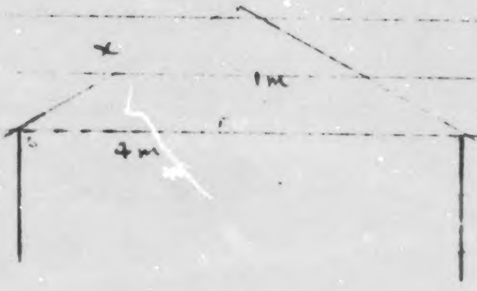
f)



g)

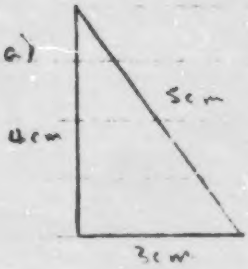


h)

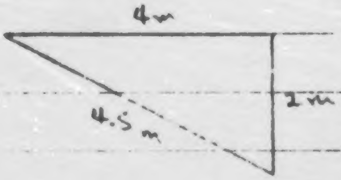


2. Which of the following are right triangles and if so, indicate the right angle.

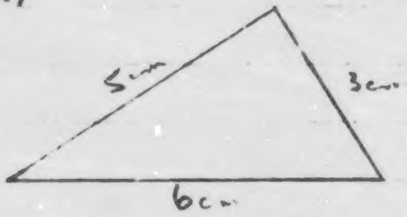
a)



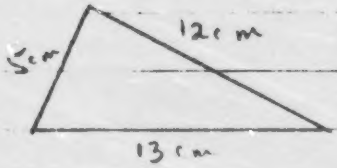
b)



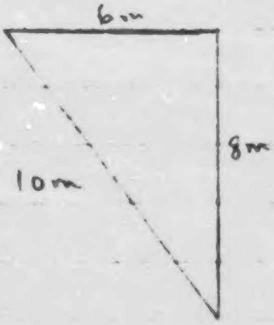
c)



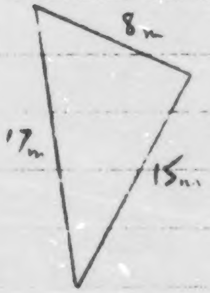
d)



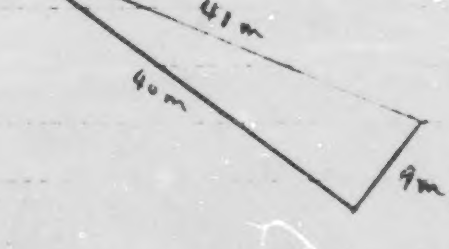
e)



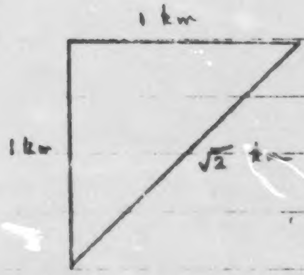
f)



g)

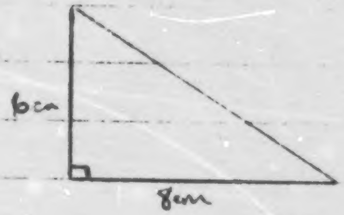


h)

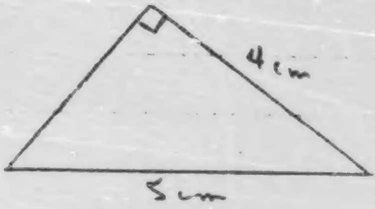


B.2 1. Determine the length of the missing side.

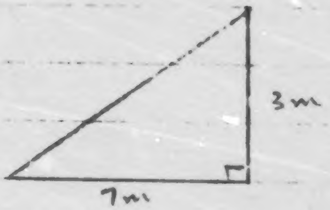
a)



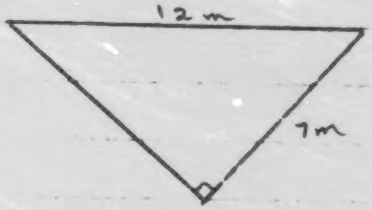
b)



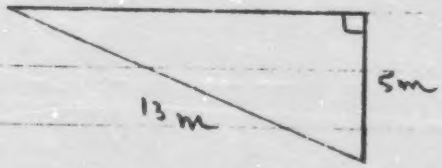
c)



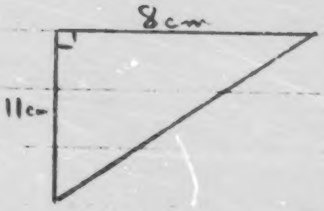
d)



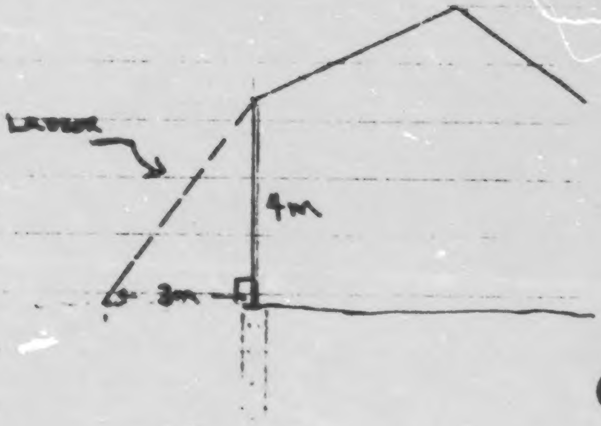
e)



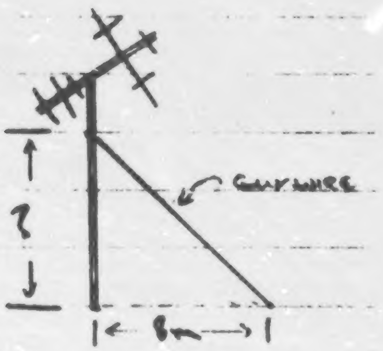
f)



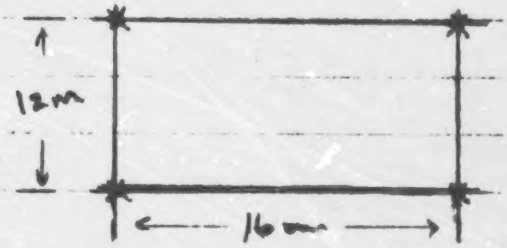
2. What length of ladder would you need to reach the top of the house?



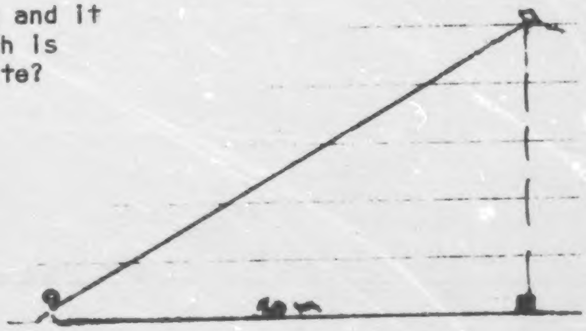
3. How high from the base of the antenna should the 10 m guy wire be attached if the other end must be attached 8 m away?



4. To check if the excavation is going to be rectangular, what length must the diagonal be?

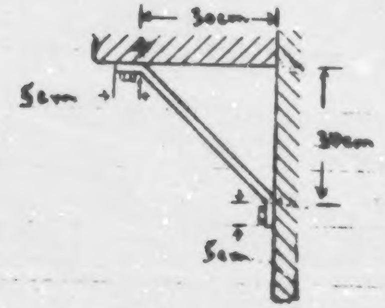


5. If a kite string is 60 m long and it is directly above a post which is 50 m away, how high is the kite?

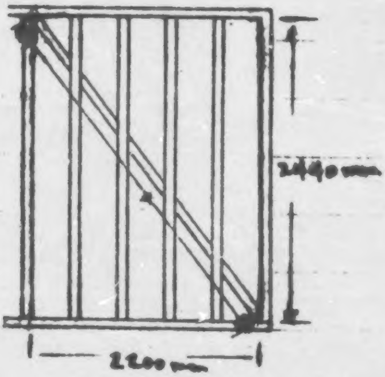


6. If the transmitting range of a certain CB is 26 km and you travel from base 15 km due east and then 20 km due south, would you be within transmitting range? By how much?

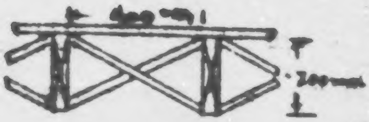
7. Determine the length of the brace illustrated.



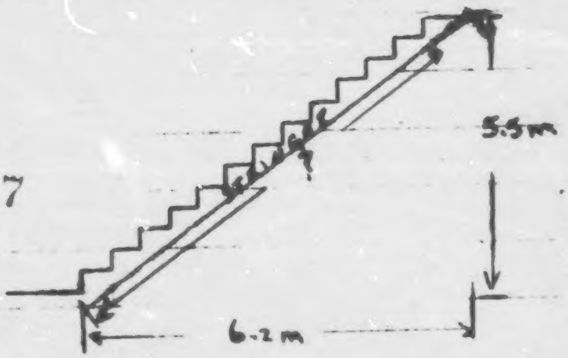
8. What is the length of the brace needed to support the section of wall illustrated?



9. What is the length of each cross bridge in the illustration?

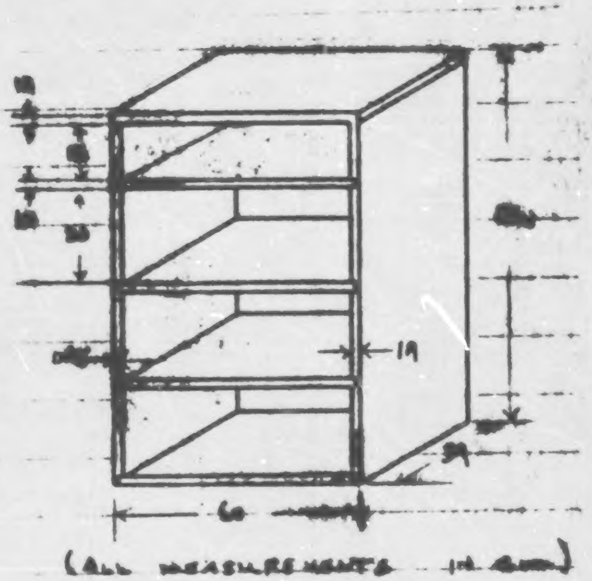


10. What stringer length would be required for the illustrated stairway?



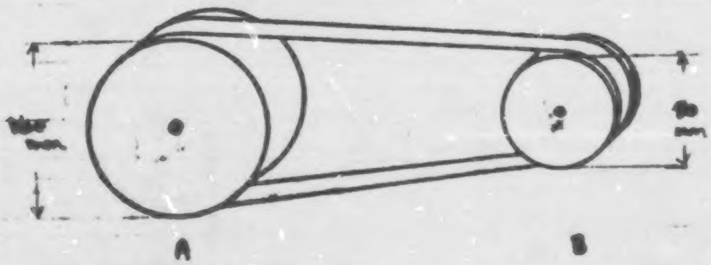
C.1,C.2 1. For the cabinet illustrated:

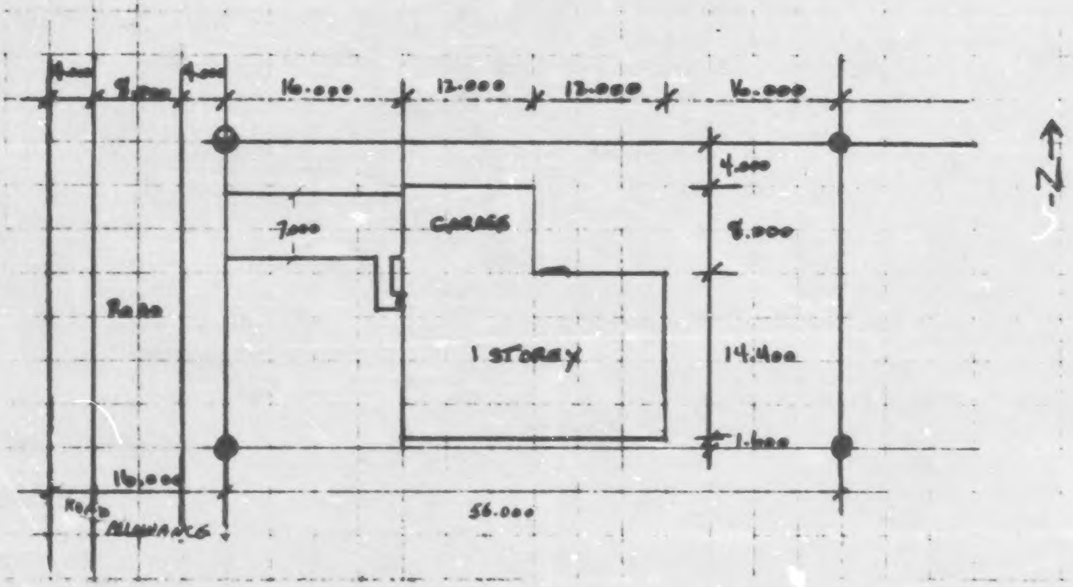
- a) What are the overall dimensions?
- b) What are the dimensions of the grooves for the shelves?
- c) Why should the grooves not be deeper, i.e., 1.5 cm?
- d) What would be the dimensions of a door for this cabinet?



2. For the pulley system illustrated:

- a) What are the diameters of each pulley?
- b) If B rotates clockwise, which way does A rotate?
- c) If B rotates 50 RPM, would A rotate faster or slower?
- d) How many times would B rotate if A rotated twice?
- e) If B was reduced in diameter to 40 mm, and was rotated, how would this reflect the speed of A?
- f) How does the length of the belt affect the operation of the system?



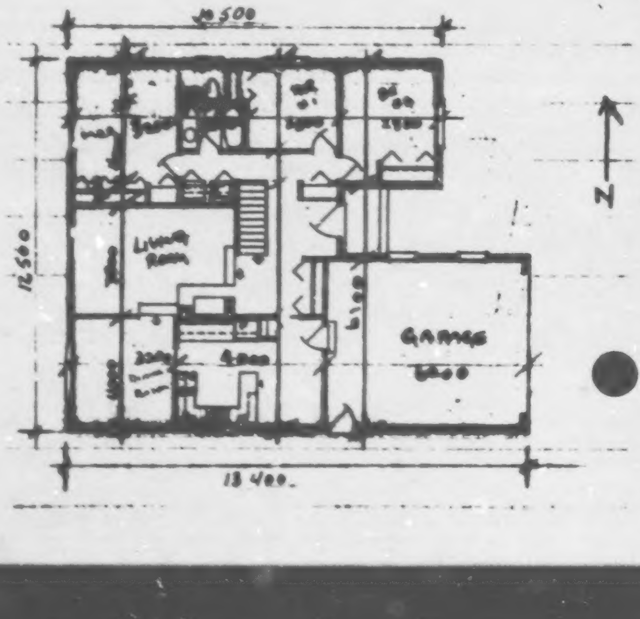


3. For the above site plan:

   a) What is the area of the house (include garage)?
   b) How much concrete would be needed for the driveway (concrete to be 150 mm deep)?
   c) Why is there 4 m allowed between the road and the west property line?
   d) Where would be a good place for a patio?
   e) Why might it be a good feature for the house to be set back the distance it is from the north property line?

4. For the floor plan illustrated:

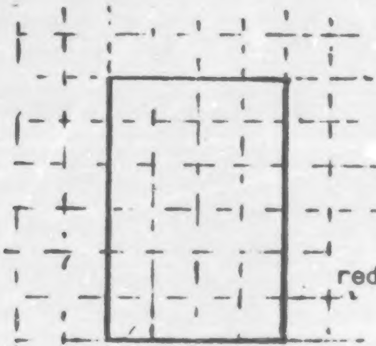
   a) How many windows throughout the house face west?
   b) What kind of door separates the dining room and kitchen?
   c) What kind of doors are used to separate the utility room and hall?
   d) Can two cars fit into the garage?
   e) Why is it a good idea to have an attached garage?
   f) What is the reason for the two bathrooms being located near each other?



g) Why is it a good idea to have eating area and a dining room?
h) What makes the location of the front closet so convenient?
i) Why is the closet in the master bedroom larger than all the other bedroom closets?
j) Why is the utility room located on the main floor?

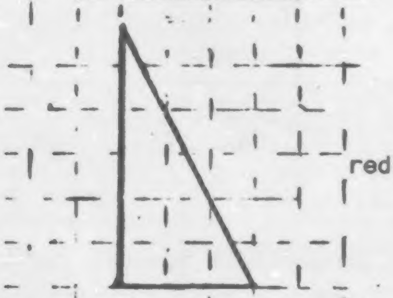
C.3 1. Construct a scale drawing of the following figures to the scale indicated.

a)



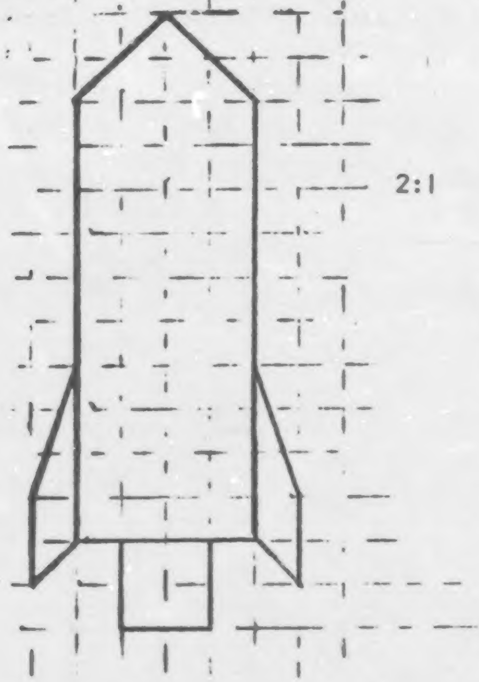
2:1 reduction

b)



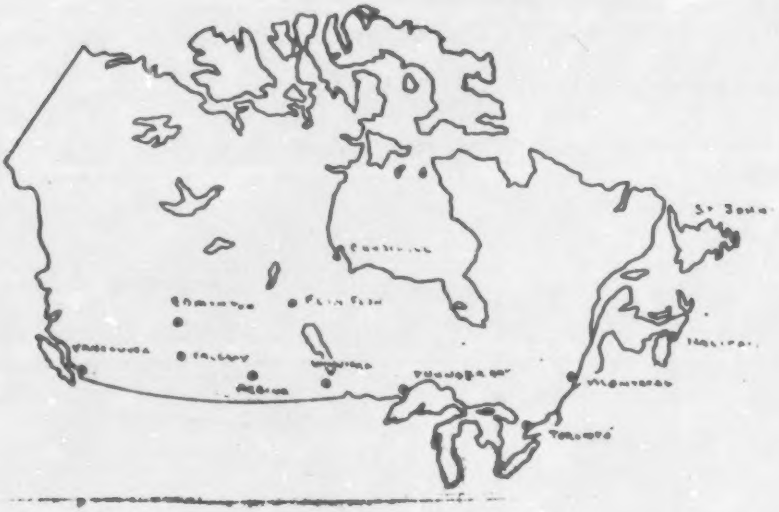
3:1 reduction

c)



2:1

2. From the following map, determine: (in km)



Scale:
1 cm:620 km

a) The distance from Winnipeg to Flin Flon.
b) The distance from Winnipeg to Toronto.
c) The distance from Vancouver to St. John's.
d) The distance from Calgary to Edmonton.
e) The distance from Toronto to Halifax.

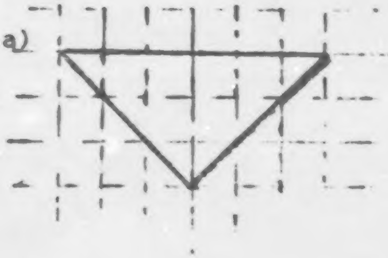
3. Make a scale drawing of the classroom using a scale 1 cm: 1 m.

4. Make a scale drawing of your home using a scale 1 cm: 1 m.

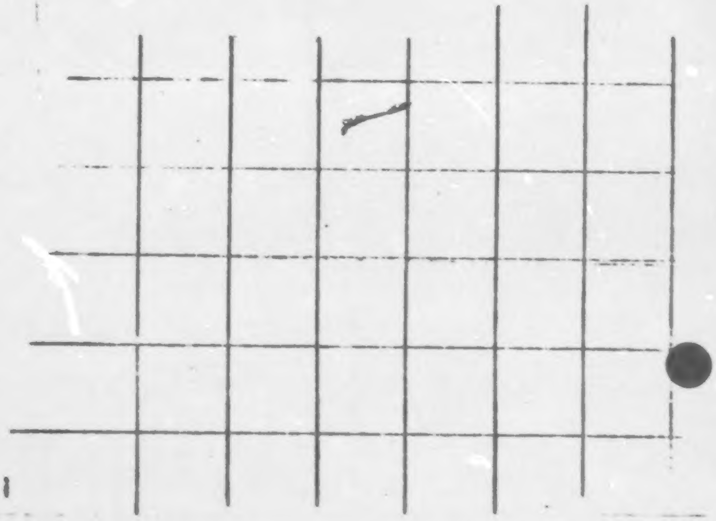
5. Make a scale drawing of a piece of furniture, i.e., table, chair, TV, etc., using a scale 1 cm: 10 cm.

C.4 1. Reduce/enlarge the following by using a grid.

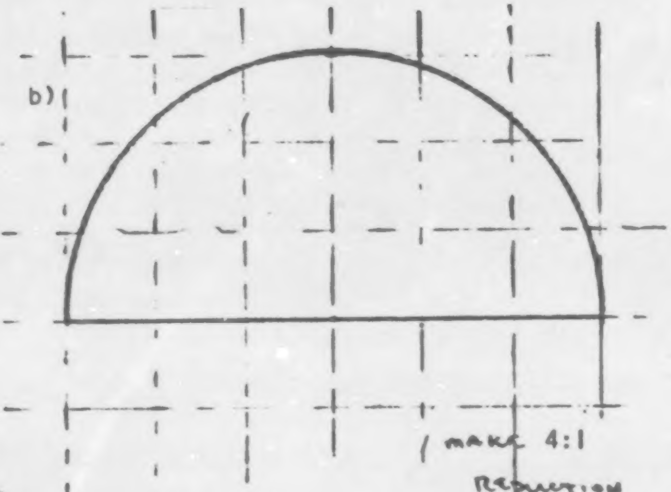
a)



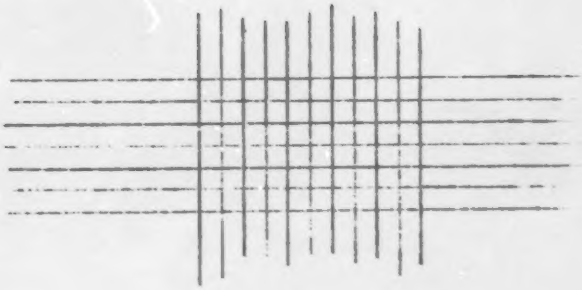
Make a
1:2
Enlargement



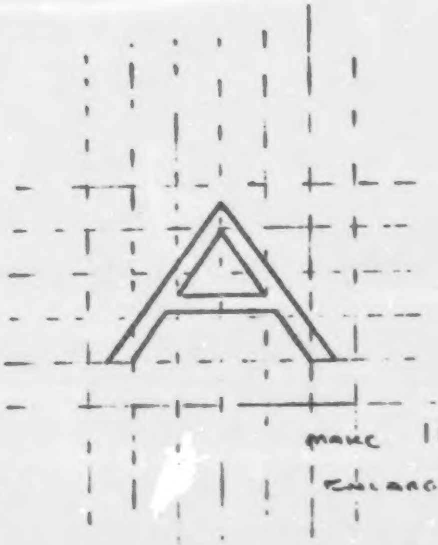
b)



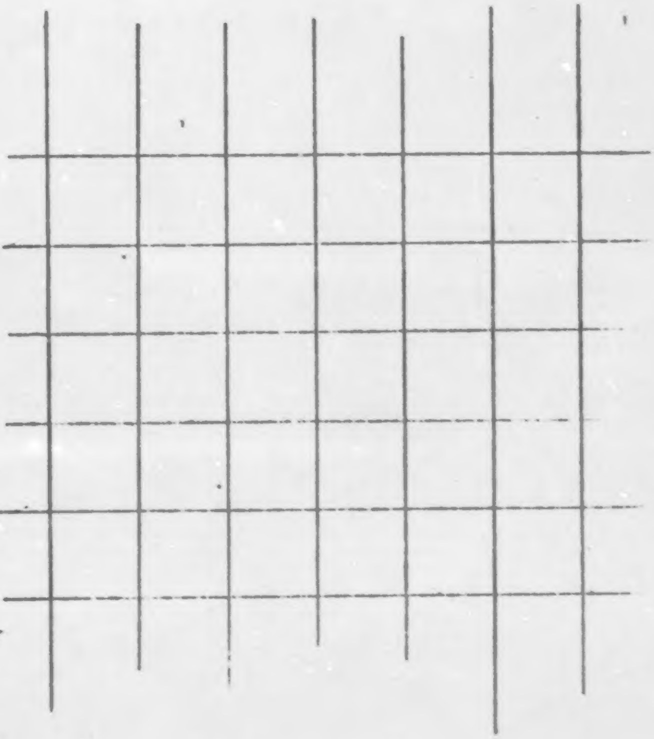
make 4:1
reduction

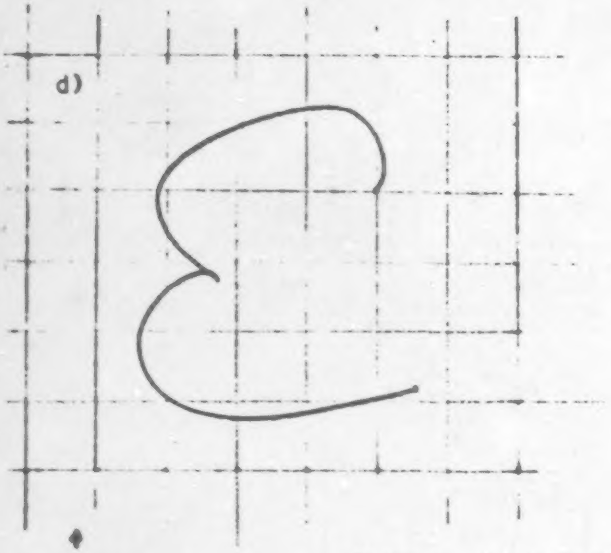


c)



make 1:2
enlargement



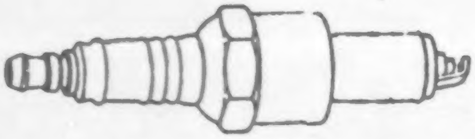


1 SQUARE PER CENTIMETER

MAKE 1:2 REDUCTION

↑
CONSTRUCT A GRID WITH
2 SQUARES PER CENTIMETER.

e)



MAKE A 4:1 ENLARGEMENT
(DRAW A GRID WITH 2 SQUARES/CENTIMETER OVER
ORIGINAL SPARK PLUG DIAGRAM)

Answer Key

A.1 1. b) 13 cm
c) 5 cm
d) 12 cm

2. d) centre

A.2 6. a) ≈ 15.7 cm
b) ≈ 37.7 cm
c) ≈ 8 cm
7. 1256 m or 1.256 km
8. 2042 m or 2.042 km
9. ≈ 62.8 cm
10. ≈ 28 m

Note: 3.14 was used for π to determine the answers. If students use the π function on a calculator, the answer will be somewhat larger.

A.3 1. ≈ 79 cm^2
2. ≈ 113 cm^2
3. ≈ 5.6 m
4. ≈ 314 cm^2
5. 1.2¢/cm^2; 1.0¢/cm^2, therefore 35 cm pizza better buy
6. 400 cm^2; 452.16 cm^2, square pan has ≈ 52 cm^2 less surface
7. $\approx 41\ \text{m}^2 \times \$5.50 = \$225.50$

A.4 1. ≈ 565 cm^2
2. 450 cm^2
3. $\approx 226 + (2)(28) = 282\ \text{cm}^2$
4. ≈ 24 m^2
5. $\approx 867\ \text{m}^2\ @\ \$4.50 = \$3901.50$
6. ≈ 6.4 cm

A.5 1. $\approx 12\,309$ cm^3
2. 0.27 m^3
3. $\approx 2.2 \times 5 = 11\ \text{m}^3$
4. ≈ 346 L
5. ≈ 1374 cm^3

B.1 1. a, b, d, e, g, h
2. a, d, e, f, g, h

B.2 1. a) 10 cm
b) 3 cm
c) 7.6 m
d) 9.7 m
e) 12 m
f) 13.6 cm
2. 5 m
3. 6 m
4. 20 m
5. ≈ 33 m
6. Yes, by 1 km
7. ≈ 52.4 cm
8. ≈ 3285 mm
9. ≈ 447 mm
10. ≈ 8.3 m

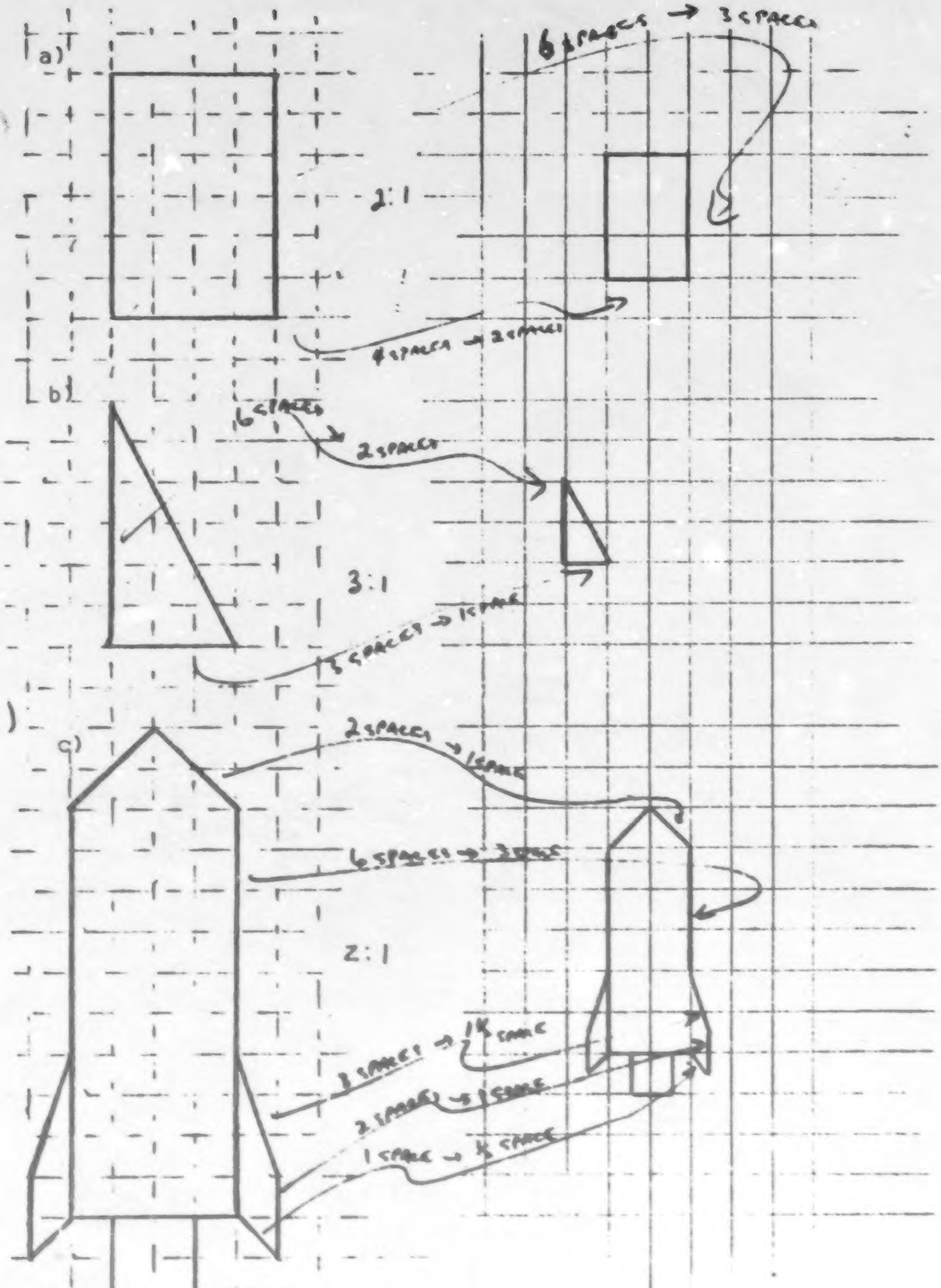
C.1,C.2 1. a) 60 cm x 39 cm x 82.1 cm
b) 1.3 cm x 39 cm x 0.95 cm
c) Would weaken sides of cabinet.
d) Width 60 cm; Height 82.1 cm; Thickness - probably use same materials as frame (1.9 cm).

2. a) A = 160 mm; B = 80 mm
b) A rotates clockwise.
c) A rotates slower.
d) B makes 4 revolutions.
e) Speed of A would be slower (by a factor of 2).
f) No effect.

3. a) 441.6 m^2
b) 16.8 m^3
c) For sidewalk and boulevard (storm sewers).
d) East of garage, area sheltered.
e) Large equipment (trucks) could pass easily through.

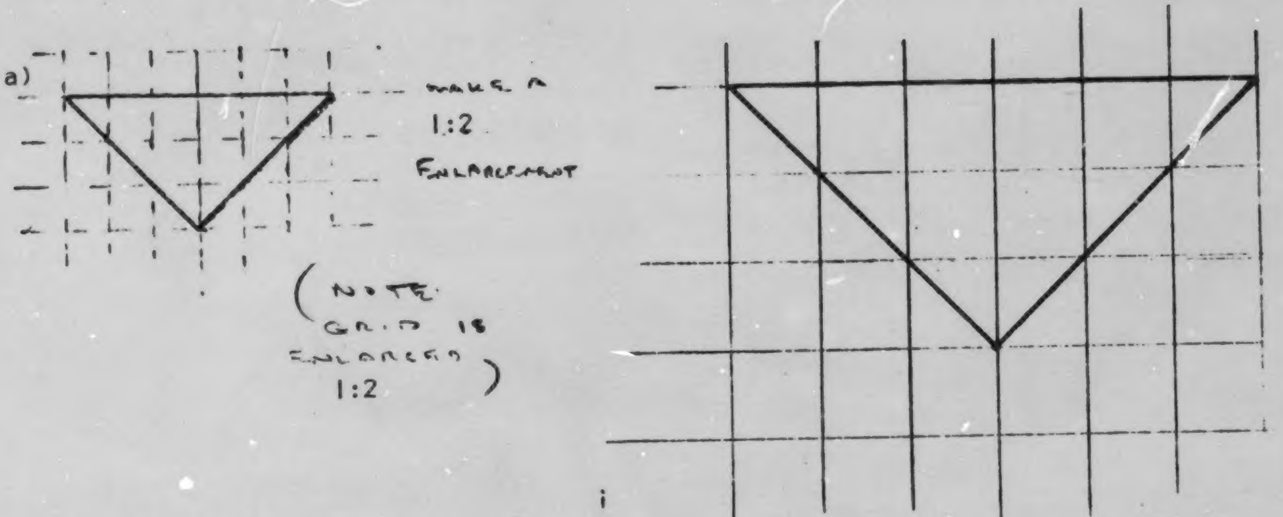
4. a) 3 windows
b) sliding door
c) folding doors
d) 6100 mm - yes
e) Convenience; kitchen would be warmer/cooler in winter/summer.
f) Plumbing can be easily connected.
g) Dining room could be used for larger groups/"formal" dinners; eating area for everyday use.
h) Close to front door and entrance from garage.
i) In many cases, used for 2 people.
j) Convenience, no need to go up and down stairs.

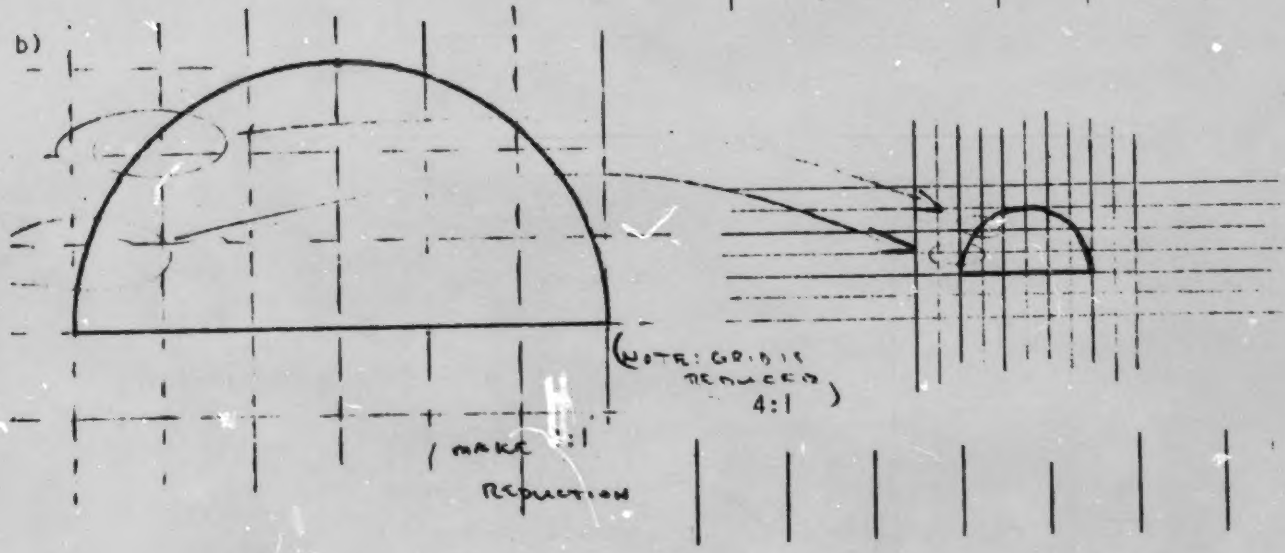
C.3 1.


a)
6 spaces → 3 spaces
2:1
4 spaces → 2 spaces
b)
6 spaces
2 spaces
3:1
3 spaces → 1 space
c)
2 spaces → 1 space
6 spaces → 3 spaces
2:1
3 spaces → 1½ space
2 spaces → 1 space
1 space → ½ space

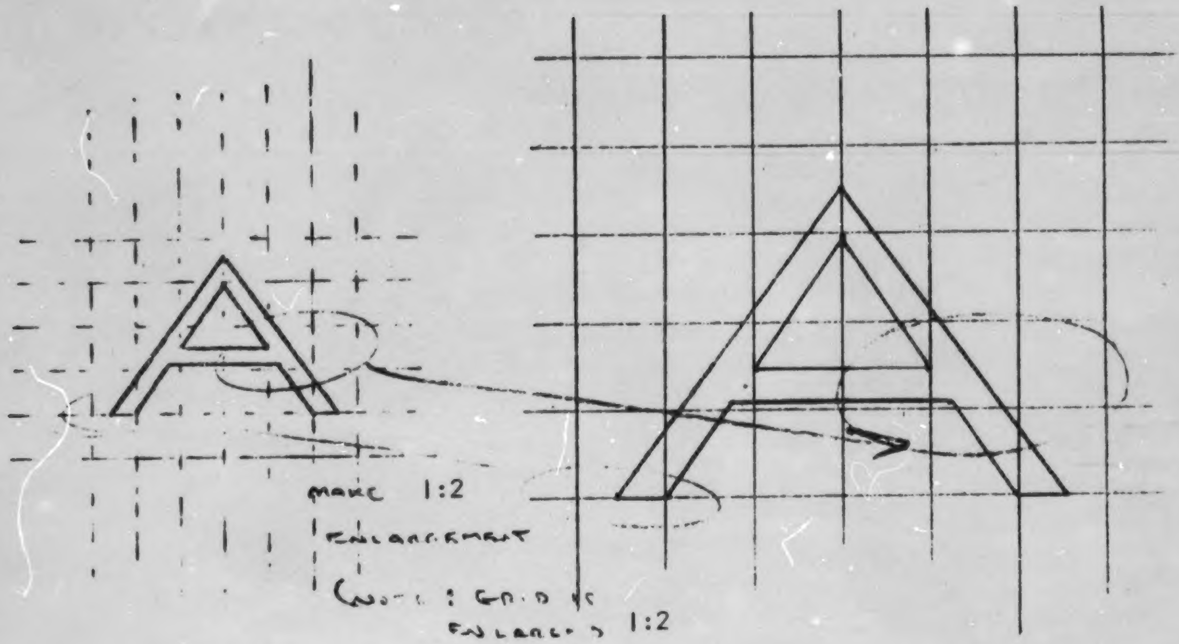
2. a) 800 km
   b) 1900 km
   c) 6000 km
   d) 300 km
   e) 1600 km

C.4 1.





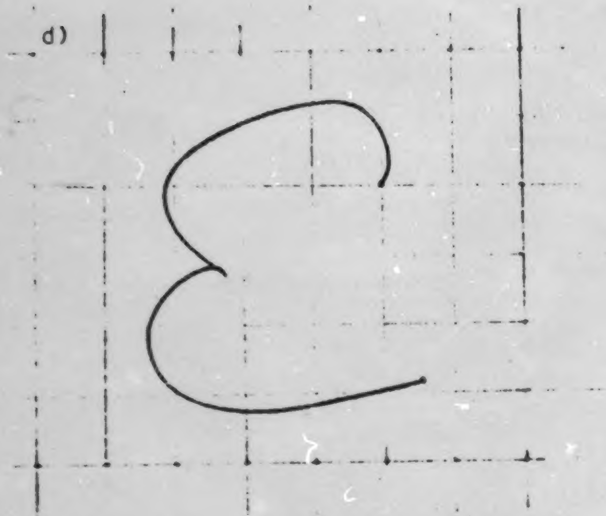
c)



MAKE 1:2 ENLARGEMENT

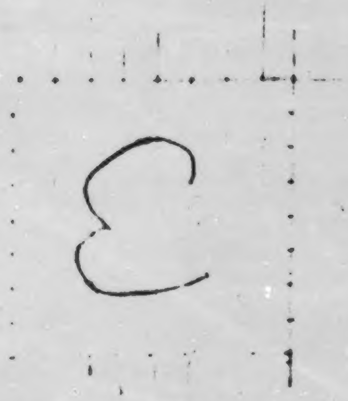
(NOTE: GRID IS ENLARGED 1:2

d)



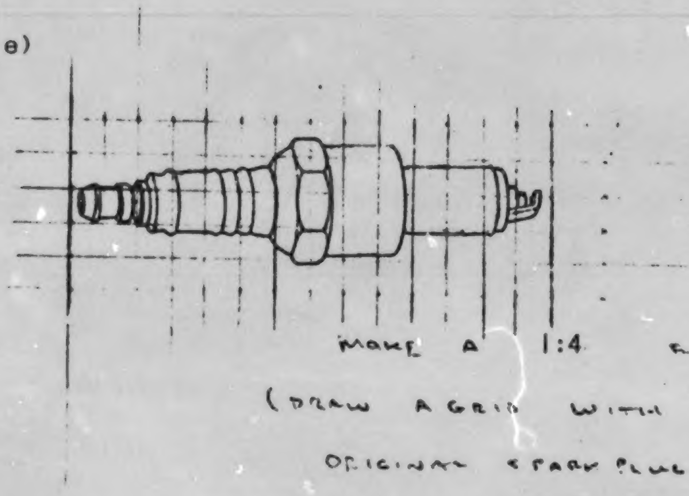
1 SQUARE PER CENTIMETRE

MAKE 2:1 REDUCTION



CONSTRUCT A GRID WITH 2 SQUARES PER CENTIMETRE.

e)



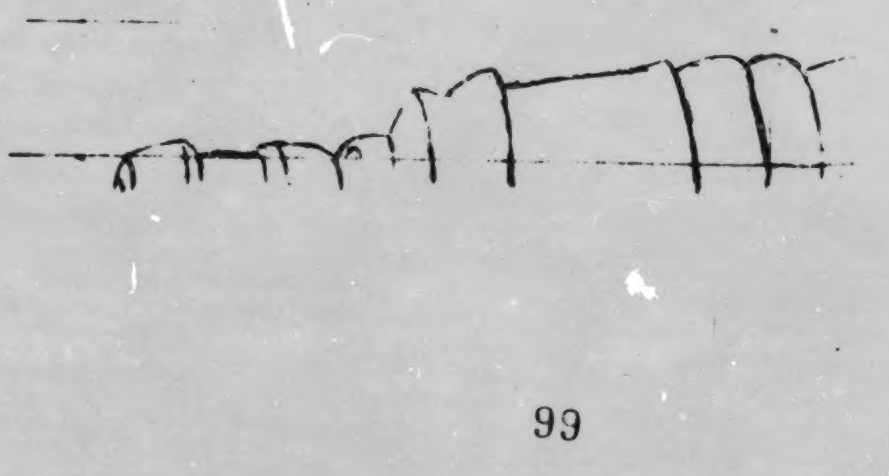
NOTE: GRID SHOULD BE SMALL TO ACCOMMODATE DETAIL

MAKE A 1:4 ENLARGEMENT

(DRAW A GRID WITH 2 SQUARE/CENTIMETER OVER ORIGINAL SPARK PLUG DIAGRAM)

GRID ON WHICH ENLARGEMENT IS TO BE MADE SHOULD BE 1 SQUARE/2 CENTIMETER

ie



ETC

C.III. ALGEBRA

A.1 1. Simplify the following expressions by multiplication:

a) $5(6x) =$ ______.
b) $2 \times (7) =$ ______.
c) $a(12) =$ ______.
d) $6L(W) =$ ______.
e) $10W(2L) =$ ______.
f) $14L(L) =$ ______.
g) $15 \times (x) =$ ______.
h) $-2(3x) =$ ______
i) $3y(y^2) =$ ______.
j) $5M(-M) =$ ______.
k) $6y^2(4y^3) =$ ______.
l) $(-3t^2)(4t) =$ ______.
m) $(-2x^3)(-4x^3) =$ ______.
n) $(6y^4)(-2y^4) =$ ______.
o) $(3y^2)(15y^3) =$ ______.

A.2 1. Simplify the following expressions by multiplication:

a) $2(L+W) =$ ______.
b) $3x(4+x) =$ ______.
c) $4x(X+6) =$ ______.
d) $6(2y^3+4y+10) =$ ______.
e) $10x(7-3x) =$ ______.
f) $x^2(15-x^2) =$ ______.
g) $(16+2x)3x^2 =$ ______.
h) $(13-2x+5x^2=x^3)3x^2 =$ ______.
i) $-6x(5x^2-3x) =$ ______.
j) $-(2x^3+6x)(-x) =$ ______.
k) $2y^2(3y^4-2y^3+5y-2) =$ ______.
l) $-3y(1-3y^4+6y^5) =$ ______.
m) $8x^2(2x^3-4x^2-2) =$ ______.
n) $(4x^3-2x^2+5x+7)(-x^2) =$ ______.
o) $5a^2(a^3-a^2+a) =$ ______.

A.3 1. Simplify the following by multiplication and collect like terms:

a) $(2x-1)(x+1) =$ ______.
b) $(x-1)(x^2+4) =$ ______.
c) $(2x+6)(x-5) =$ ______.
d) $(x-1)(x+1) =$ ______.
e) $(2x+5)(2x-5) =$ ______.
f) $(3x-2)(3x-2) =$ ______.
g) $(3x+4)(2x-5) =$ ______.
h) $(7y-2)(2y-7) =$ ______.
i) $(4+x)(3x+4) =$ ______.
j) $(x^2-9)(x^2+4) =$ ______.
k) $(2x+1)(1-2x) =$ ______.
l) $(4x-9)(x+9) =$ ______.
m) $(2a^3+4a)(3a^2-5) =$ ______.

A.4 1. Simplify the following by division:

a) $14x \div 2 =$ ______.
b) $65x \div 13x =$ ______.
c) $35x^2 \div 7x =$ ______.
d) $15x^3 \div x^2 =$ ______.
e) $21x^5 + 7x^3 =$ ______.
f) $36x^7 \div 12x^5 =$ ______.
g) $-42y^5 \div -14y^5 =$ ______.
h) $-10t^3 \div 10 =$ ______.
i) $14x^4 \div 10x^3 =$ ______.
j) $36b^8 \div 20b^5 =$ ______.
k) $3^5 \div 3^2 =$ ______.
l) $10^{10} \div 10^7 =$ ______.
m) $4^4 \div 4^2 =$ ______.
n) $6^6 \div 6^4 =$ ______.
o) $7^5 \div 7^5 =$ ______.

A.5 1. Simplify the following by division:

a) $(32x-16) \div 8 =$ ______.

b) $(51y^2+3y) \div 3y =$ ______.

c) $(33-6x^3) \div (-3) =$ ______.

d) $(55y^5+5y^2) \div 5y =$ ______.

e) $(30Z^4-15Z^3+20Z^2-5Z) \div 5Z =$ ______.

f) $(144N^3-72N^2+6N) \div 12N =$ ______.

g) $(52y^2+16y-18) \div 4 =$ ______.

h) $\frac{17x^4-34x^3+51x^2}{17} =$ ______.

i) $\frac{x^4+x^3+x^2}{x} =$ ______.

j) $(15y^4-30y^3+20y^2) \div 5y^2 =$ ______.

k) $\frac{27x^3-18x^2+9x}{9x} =$ ______.

l) $\frac{26a^3-39a^2-13a}{-13a} =$ ______.

m) $\frac{14a^5-7a^3+21a^2}{7a} =$ ______.

n) If the area of a rectangle is $4a^3-8a^2$ and one side is 2a, what is the dimension of the other side?

o) The total cost of "3x" items is $\$12x^4-9x^3+6x^2$. How much does each item cost?

B.1.a 1. Evaluate the following when a = 3, b = 5, c = 8, and d = 10.

a) $\frac{a+b}{c}$

b) $(2c+a)d$

c) $6(d/b)$

d) $5b+2d-3c$

e) $\frac{4c+6a-7d}{5b}$

f) $\frac{(2a+b)(3d-2c)}{3b-6}$

g) $1/2\ abc$

h) $.75bd+ac$

2. If $P = 2(L+W)$ evaluate P when L=13 and W=5.5.

3. Evaluate S according to $S = 1/2gt^2$ if g=32 and t=3.

4. Given that P = \$2500, R=0.15 and t=6, find I by the formula: I=PRT

5. Evaluate $E = \sqrt{PR}$ where P=1500 and R=500.

6. Evaluate $A = (\frac{b_1+b_2}{2})(h)$ where $b_1 = 18$, $b_2 = 30$ and $h = 8$.

7. Evauate $A = 1/2(2\pi r)(S)$ where $r = 10$, $\pi = 3.14$ and $S = 20$.

8. Determine the Celsius reading according to the formula: $C=5/9(F-32^\circ)$ where $F = 86^\circ$.

9. Evaluate R_t by the formula: $R_t = \dfrac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}}$ where $R_1 = 2$, $R_2 = 5$ and $R_3 = 10$.

10. Evaluate $X_L = 2\pi fL$; when $f = 2$ MHz and $L = 20$ mH.

B.1.b 1. Given: $C = 5/9(F-32^\circ)$ where C is the temperature in Celsius and F is the temperature in Fahrenheit.

   a) Find the temperature in Celsius if Fahrenheit temperature is 77°.

   b) Find the temperature in Celsius if the Fahrenheit temperature is 14°.

2. Given: $A = (\frac{b_1+b_2}{2})h$ where A is the area of a trapezoid
   b_1 is the length of base
   b_2 is the length of the other base
   h is the height of the trapezoid

   a) Find the area of a trapezoid if one base is 23 cm, the other is 57 cm and the height is 15 cm.

   b) Find the area if the height is 20 m, one base is 15 m and the other 30 m.

   c) Find the area if one base is 27 m, the other is 39 m and the height is 16 m.

3. $A = 2lw + 2l + 2wh$ where A is the surface area of a rectangualr solid
   l is the length
   w is the width
   h is the height

   a) Find the surface area of a cardboard box if the length is 20 cm, the width is 47 cm and the height is 18 cm.

   b) Find the surface area of the rectangular solid if the height is 18 cm, the width is 74 cm, and the length is 58 cm.

4. The cost of renting a motor home is calculated by the formula
   $C = 30d + .2k$ where C is the cost of renting the motor home
   d is the number of days
   m is the number of km driven

   a) Calculate the cost of renting a motor home for 21 days and an estimated driving distance of 4000 kilometres.

b) Calculate the number of days one could rent a motor home if it is to be driven 1150 km and $800 is the cost of the rental.

c) Calculate the cost of renting a motor home for 14 days if the distance to be covered is 1800 km.

5. The volume of a pyramid is found by the formula $V = 1/3\, lwh$ where
l is the length of the base
w is the width of the base
h is the height of the pyramid

a) Calculate the volume of a pyramid whose base is 42 m long and 27 m wide and whose height is 60 m.

b) Calculate the volume of a pyramid whose base is 87 m long, 70 m wide and 92 m high.

6. The height that a rocket will reach is measured according to the formula $h = h_b + \frac{a^2}{20}$ where h is the height reached by the rocket
h_b is the height at "burn out"; burn out is the moment when fuel runs out
a is the speed at "burn out" in metres/second

a) Calculate the height a rocket will reach if it is 50 m high at "burn out" and travelling at a speed of 36 metres per second.

b) Calculate the height of a rocket at "burn out" if the total height to be reached is 200 m and the speed at "burn out" is 50 m/sec.

c) Calculate the height a rocket will reach if it is 160 m at "burn out" and the speed is 50 m/sec.

7. The area of a ellipse (oval) is found by the formula $A = \pi ab$
where A is area
π is 3.14 (approximately)
a is one-half of the short axis
b is one-half of the long axis

a) Find the area of an ellipse in which the length of the short axis is 6 cm and the length of the long axis is 9 cm.

b) Find the length of the short axis when the area of the ellipse is 1256 cm^2 and the length of the long axis is 40 cm.

8. The break power in kilowatts is given by the formula $b_p = \frac{2\pi rnf}{60\ 000}$
where b_p is the break power in kilowatts
r is the length of the breaking arm in metres
n is the engine speed in number of revolutions per minute
f is the force applied to the breaker in Newtons

Find the breaking power if a force of 400 Newtons is applied through a breaking arm of 80 cm when the engine speed is 1000 rev./min.

9. The total displacement of an engine is found by the formula $D = 1/4\,\pi b^2SN$ where D is displacement
   b is the bore of the cylinder
   S is the length of the stroke
   N is the number of cylinders

   a) Find the displacement of an 8 cylinder engine with a 9 cm bore and an 8.7 cm stroke.

   b) Find the displacement of a 6 cylinder car that has an 8.3 cm bore and a 7.8 cm stroke.

10. $r = \sqrt{(x-s)^2+(y-t)^2}$ is a formula which will find the radius of a circle on a cordinate place where r is the radius
    x is x-value of a point on the circumference
    y is y-value of a point on the circumference
    s is x-value of the centre
    t is y-value of the centre

    a) Find the radius of a circle when the "x" and "y" values of a point on the circumference are 12 and 5, respectively and the x-value of the centre is 2 and the y-value of the centre is 1.

    b) Find the radius of a circle which has a point on the circumference (-5, 12) and a centre at (0, 0).

B.1.c

1. Electromotive force (E) in volts is equal to the current (i) in amperes times the resistance (R) in ohms.

   a) Find the electromagnetic force required to send a current of 2 Amp through a resistance of 55 ohms.

   b) It takes 120 Volts to send a current of 4 Amps through a wire. Find the resistance.

2. If the pitch of a roof is the quotient of the amount of rise and the amount of span:

   a) Determine the rise if the pitch is 0.12 m and the span is 10 m.

   b) Determine the pitch if the rise is 3.5 m and the span is 12 m.

3. Time of travel equals distance divided by the average rate of speed.

   a) How long will it take to drive 750 km if your average speed is 90 km/hour?

b) How far is it from Montreal to Toronto if it takes 6-1/2 hours to drive the distance at an average rate of 85 km/hour?

4. Fahrenheit temperature is one and eight-tenths times the Celsius reading plus 32 degrees.

   a) Find the Fahrenheit reading equivalent to +40°C.

   b) Find the Fahrenheit reading equivalent to -40°C.

5. The area of a circle is   times the radius squared.

   a) Find the area of a circle with a radius of 15 cm.

   b) Find the radius of a circle whose area is 628 square mm.

6. The area of a triangle is one-half the product of its base and height.

   a) Find the area of a triangle whose base is 28 cm and height is 35 cm.

   b) Find the height of a triangle whose area is 320 cm^2 and whose base is 24 cm.

7. Simple interest is the product of principal, rate, and time (in years).

   a) Determine the amount of interest earned on $520 invested for 2 years at 17% per year.

   b) Find the amount of principal needed to earn $130 interest in one year when the rate is 13% per annum.

8. The number of screw threads per centimetre is equal to one divided by the pitch of the screw in centimetres. Find the number of threads in a screw whose pitch is .2 cm.

9. The Pythagorean theorem states that the square of the hypotenuse of a right triangle is equal to the sum of the squares of the other two sides.

   a) Find the length of the hypotenuse if the other sides of the triangle are 5 cm and 12 cm.

   b) Find the length of the hypotenuse if the other sides are 15 cm and 19 cm.

10. The radius of a cylinder is equal to the square root of the quotient of the volume and 3.14 times the height. Find the radius of a cylinder whose height is 15 cm and whose volume is 3014.4 cubic cm.

C.I,C.2

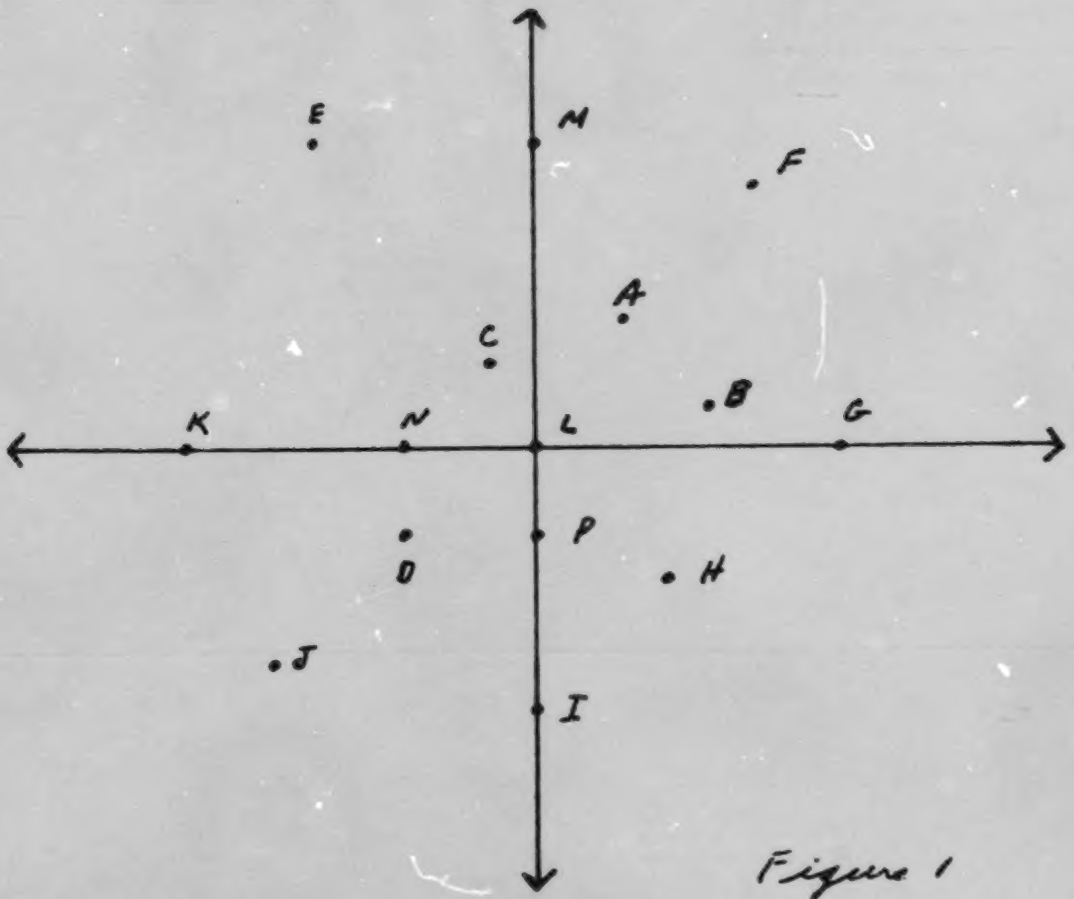


Figure 1

Re Figure I

1. The horizontal number line is referred to as the ________________.

2. The vertical number line is referred to as the ________________.

3. The joint at which the two axes intersect is referred to as the ________.

4. The location of any point on the coordinate plane is given by an ____________________ of number.

5. For each ordered pair of numbers, the ______________ component is stated first and the ________________ component is stated second.

6. Give the numbers (in Roman Numerals) of each quadrant described.

   a) upper left ______
   b) lower right ______
   c) lower left ______
   d) upper right ______

7. List the letters A-P (omitting O) and give the coordinates of each point.

8. On a piece of graph paper draw a coordinate plane.

   a) Approximately label each of the following:

      x-axis
      y-axis
      quadrant I
      quadrant II
      quadrant III
      quadrant IV
      origin

   b) Locate each of the following points on the coordinate plane, place a dot, and label the point with its letter name.

      A (4,6)
      B (4,0)
      C (-3,-2)
      D (-7,0)
      E (-4,6)
      F (-4,0)
      G (3,-2)
      H (0,-5)
      I (0,7)
      J (-3,-7)
      K (0,2)
      L (-4,5)
      M (0,-7)
      N (5,-5)

9. Give the sign (positive or negative) of each coordinate for points found in:

   a) quadrant II x-coord. _____ y-coord. ______
   b) quadrant I x-coord. _____ y-coord. ______
   c) quadrant IV x-coord. _____ y-coord. ______
   d) quadrant III x-coord. _____ y-coord. ______

10. Name the quadrant where each of the following points would be found.

   a) (+,+)
   b) (+,-)
   c) (-,+)
   d) (-,-)
   e) (+,+)
   f) (-,+)
   g) (-,-)
   h) (+,-)

11. All points on the x-axis are easily identified because the __________ is always zero.

12. All points on the y-axis are easily identified because the __________ is always zero.

13. On which axis would you expect to find each of the following:

a) (0,3)
b) (-3,0)
c) (6,0)
d) (0,-8)
e) (206,0)
f) (-1050,0)
g) (0,10)
h) (0,.3)
i) (.8,0)
j) 0,-103)

14. Does the origin (0,0) lie in any quadrant? Discuss.

15. On which axis does the origin (0,0) lie? Discuss.

C.3 The following are a list of suggested experiments or activities. Write an equation for the relationships.

1. Weighing water added to a container; find net weight of empty container at 0; record mass increase as (small) equal amounts of water are added; plot the data.

2. Perform same activity, as in number 1, using marbles of the same size; plot the data on a graph.

3. Using play money, purchase items of the same cost and record cost as more items are purchased; plot the data on a graph.

4. Measure the height of a pile as objects of the same size are stacked; plot the data on a graph (text books work well).

5. Measure the length of a series of identical objects laid end to end; plot the data on a graph (text books work well).

6. Place items of the same size adjacent to each other and record the area covered; plot the data on a graph (text books work well).

7. A laborer in a factory is stacking cases of the product at an average rate of 1 case every 6 seconds. Graph the number of cases stacked over a period of 2 minutes.

8. a) A farm worker is loading grain into a truck using an auger which loads 50 bushels/minute. Graph the number of bushels loaded in 7 seconds.

   b) The farmer installs a bigger engine on the auger and it can now load 90 bushels/minute. Graph the number of bushels loaded in 7 seconds. Compare the two graphs.

9. a) An irrigation pump, driven by a tractor, pumps 8000 L of water per minute. Graph the volume of water spread on a field over a period of 8 minutes.

   b) The farmer needed the tractor for some other work. He replaced it with a smaller tractor capable of pumping only 5000 L of water per minute. Draw a new graph and compare it to the former graph.

   c) Suppose the second tractor developed engine trouble and could only pump 3000 L of water per minute. Redraw the graph and compare it to the former graphs.

C.5 1. The manager of a restaurant specializing in perogies asks his staff to make extra perogies due to a special holiday on the weekend. They already had 500 perogies on hand and he wanted more. Graph the total number of perogies on hand if the staff produced 25 perogies per minute for the next 10 minutes.

2. A laborer at a fish packing plant arrived at work to find that a previous worker had filleted 9 cases of fish. If the laborer filleted 1.2 cases of fish per hour, show the total number of cases of fish filleted at the end of each of the next 8 hours.

3. A supervisor was counting the number of buses passing by a given intersection. By 2:00 p.m. he had counted 30 buses. If he averaged 10 buses per hour for the next five hours, show the total number of buses at the end of each of the next five hours.

4. Text books were stacked on a table top. Record the height of the pile above the floor as each book is added. Plot the data on a graph.

C.7 1. For each of the following give the slope; give the y-intercept; graph the straight line.

a) $y = x+3$
b) $y = 2x-2$
c) $y = 2x$
d) $y = 1/2x+1$
e) $y = 3/4x+6$
f) $y = 2/3x-5$
g) $y= 3x-6$
h) $y = 4x-1$
i) $y = 5x+3$
j) $y = 4x$
k) $y = 2x=1/2$
l) $y = 4x+1/3$
m) $y = 3/5x$
n) $y = 1/2x-5$
o) $3y = 6x-9$
p) $2y = 5x+4$
q) $5y = 10x-2$
r) $3/2y = 3y+6$
s) $4y = 2x-3$
t) $.5y = x+1$

D.1

1. At a Jets-Leafs game last year there were approximately 16 000 people in attendance. The Jets had 18 players dressed for the game. Toronto had only 17 players dressed because of injuries and negotiation problems between Harold Ballard and the captain. The Maple Leafs won the game 7-4. That was the eighth game in a row the Jets had lost. Their record to that point in the year was 13 wins, 9 losses. Express the following as ratios:

   a) The number of Leafs dressed to the number of Jets in uniform.
   b) The number of goals scored by the Jets to the total number scored in the game.
   c) The number of losses in the Jets losing streak to the number of total losses.
   d) The number of wins to the total number of losses.
   e) The number of wins to the total number of games played.
   f) The number of officials (referees, linesmen) to the total number of players on the ice.
   g) The number of goals scored by Toronto to the number scored by Winnipeg.

2. If the ratio of Jet supporters to Toronto supporters was 9 to 1, express that as a ratio.

3. The attendance for the Colorado Rockies-Jets game was 7000. Express the Rockies' attendance to that of the Toronto-Winnipeg game.

4. The total receipts for the game were $196 000. Express the receipts as a ratio of the attendance.

5. During the game three fights broke out in the stands. Express the ratio of fights to total attendance.

6. Dave Babych played 31 minutes of the game. Express his ice-time to the total time in the game. He received 2 penalties. Express the ratio of the number of penalties to his ice-time.

D.2

1. Express the following ratios in lowest terms:

   a) 9:6
   b) 27:132
   c) 250:175
   d) 12 cm to 48 cm
   e) 15 cm to 2.5 cm

f) a nickel to a quarter (in cents)
g) a dime to a quarter (in cents)
h) 85 revolutions to 35 revolutions
i) 4.5 ohms to 7 ohms
j) 4-1/2 blocks to 3/4 block
k) 4:4:2
l) 36:18:9
m) 9:12:15
n) 1:1.5:2.5
o) According to a deck of playing cards, express the following ratios:
  i) number of red cards to number of black cards
  ii) number of aces to number of cards
  iii) number of red jacks to number of face cards
  iv) number of cards in each suit to total number of cards in deck
  v) number of kings to number of cards

2. Express each of the following ratios with a denominator (second term) of 1.

a) 16/4
b) 120:30
c) 5/15
d) 4:20
e) 200/120

3. Determine the number of km/hour.

a) 1000 km in 10 hours
b) 540 km in 6 hours
c) 600 km in 7-1/2 hours
d) 350 km in 6 hours
e) 900 km in 9 hours, 12 minutes

4. The distance from Regina to Medicine Hat is 480 km. Reggie drives that distance in 5 hours. What ratio represents his speed in km/hour?

5. Express the following ratios with a numerator (first term) of 1.

a) 3/60
b) 4:100
c) 6:8
d) 30/16
e) 17:8

6. Find the unit price of:

a) 2 dozen eggs for $1.98
b) 7 L.P.'s at $52.50
c) 5 tins of soup at $1.98
d) 4 tins of soup at $1.52
e) 6 lbs. of bananas at $2.55

7. Doug Lecuyer got 25 minor penalties in 20 games. How many penalties per game is this? How many minutes did he spend in the penalty box per game?

8. Josie received $10.50 for babysitting 6 hours. What was the rate per hour?

9. Rick typed 340 words in a five minute timing. What is the ratio of words typed per minute?

10. On a map 3 centimetres represents 480 km. What is the scale of the map? (1 cm represents ? km)

D.3 1. Are the following ratios equivalent (do they form a proportion)?

a) $\frac{3}{8}$ and $\frac{63}{168}$

b) $\frac{1}{5}$ and $\frac{4.6}{23}$

c) $\frac{4.2}{3}$ and $\frac{1.5}{1}$

d) $\frac{7.5}{2.5}$ and $\frac{6}{2}$

e) $\frac{7}{10}$ and $\frac{15}{21}$

f) $\frac{3}{75}$ and $\frac{9}{225}$

g) $\frac{1.3}{3}$ and $\frac{7.28}{16.8}$

h) $\frac{11}{5}$ and $\frac{16.5}{7.5}$

i) $\frac{5}{2}$ and $\frac{525}{225}$

j) $\frac{4.3}{1}$ and $\frac{25}{5.6}$

k) $\frac{1}{7.8}$ and $\frac{11}{70}$

2. Solve the following proportions.

a) $\frac{2}{3} = \frac{x}{45}$

b) $\frac{13}{2} = \frac{58.5}{x}$

c) $\frac{x}{5} = \frac{7}{10}$

d) $\frac{1}{3} = \frac{5}{x}$

e) $\frac{18}{12} = \frac{x}{15}$

f) $\frac{37}{x} = \frac{4}{3}$

g) $\frac{82}{15} = \frac{23}{x}$

h) $9:15 = r:60$

i) $3:10 = 7.5:p$

j) $962:x = 37.8:0.181$

k) $\frac{2}{x} = \frac{x}{8}$

l) $\frac{x}{5} = \frac{3}{x}$

m) $\frac{s}{14} = \frac{3}{s}$

n) $x:7 = 15:x$

o) $\frac{5}{x+5} = \frac{x-5}{3}$

p) $\frac{2}{x-2} = \frac{x+2}{9}$

q) $\frac{x+7}{2.5} = \frac{4}{x-7}$

r) $t-10:21 = 1:t+10$

s) $m-6:3 = 15:m+6$

D.4

1. On a map 1 cm represents 15 km.

   a) What measure represents 27 km?
   b) What measure represents 180 km?

2. The scale on a map is 1cm:160 km. If the distance between two cities is 720 km, how many cm will the distance be on the map?

3. The distance between Winnipeg and Vancouver is approximately 2400 km. At an average rate of 90 km/hour, how long would it take to drive non-stop from Winnipeg to Vancouver?

4. A certain antibiotic is prescribed according to body mass. If 2.5 milligrams of the drug is the correct dosage for a person with body mass of 55 kg, what is the correct dosage for a person whose body mass is 66 kg?

5. If Dieter Brock completes 5 passes out of 8 attempts on the average, how many passes would we expect him to complete in the Grey Cup game if he attempts 24 passes?

6. If your heart beats 8 times in 6 seconds, how many heartbeats would you expect in (a) 45 seconds? (b) 1 minute? (c) 6 hours?

7. A model airplane is built to a scale of 1 cm on the model to 32 cm on the actual airplane. How long is the actual plane if the model is 50 cm long?

8. The distance travelled is directly proportional to the time of travel. If you travel 670 km in 8 hours, how long will it take you to travel 1120 km?

9. The pressure exerted by a confined gas is inversely proportional to the volume. 1.5 L of gas exerts a pressure of 120 kPa. If the volume is reduced by compression to .75 L, what is the new pressure?

10. If a water pump pumps 720 L of water in 3 minutes, how much water can it pump in 1 hour?

11. If an automobile uses 9 L of gasoline to travel from Selkirk to the Winnipeg airport, a distance of approximately 60 km, how many litres of fuel would be required to go from the airport to the Town of Gimli, approximately 120 km distant?

12. If a car travels 35 km in 25 minutes, how far will it go in two hours?

13. A babysitter charges 25% more per hour now than he did two years ago. If his present rate is $1.50 per hour, what was his original hourly charge?

14. An airplane travels 850 km/h. How long will it take to travel the 1200 km from Winnipeg to Calgary?

15. If you can do 8 math problems in 45 minutes, how long will it take you to complete a unit containing 22 similar questions?

16. An ice cream vendor estimates that she makes a profit of $15 on total sales of $650. If her total sales tomorrow were $800, what profit will she make?

[illegible]. Of a total population of 24 000 in City A, 7500 persons are under the age of 25. If the population of City B is of a similar mix, and there are 9000 people under age 25, what would be the total population of that city?

18. If a distribution of 3000 packets of detergent samples generate sales of 1400 packages of that product, what sales would you expect to result from a sample distribution of 8000 packets?

19. If a decorator requires 30 m^2 of pine panelling to complete fixture walls in his two model homes, what quantity will be needed to similarly finish feature walls in a development consisting of 18 houses?

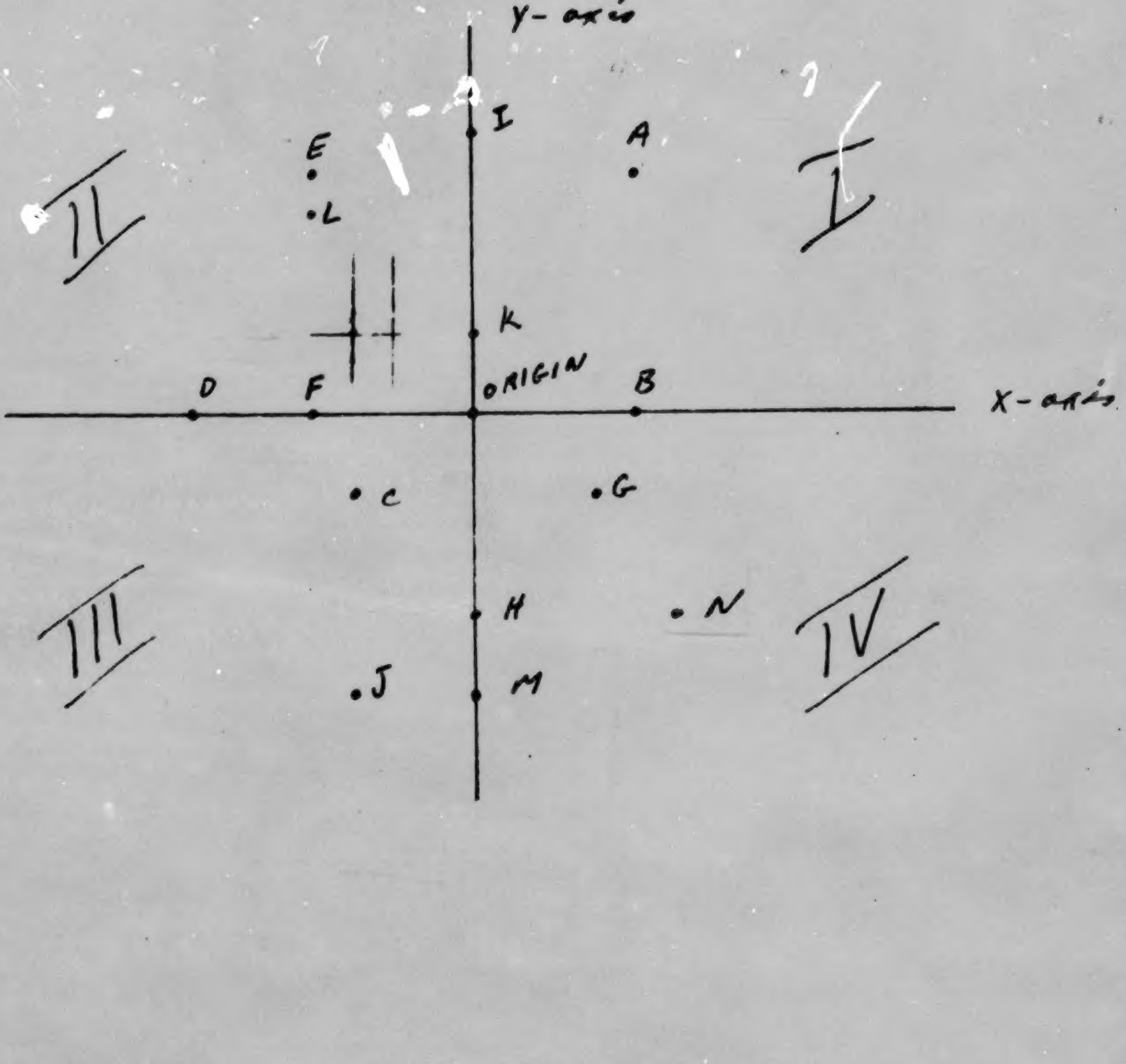
20. A survey indicates that a factory worker can produce 2400 items in a 38 hour week. If his work week is increased to 40 hours, what will his production total be? (To the nearest complete item.)

Answer Key

C.1,C.2 1. x-axis

2. y-axis
3. origin
4. ordered pair
5. x; y
6. a) II
   b) IV
   c) III
   d) I
7. A (2,3)
   B (4,1)
   C (-1,2)
   D (-3,-2)
   E (-5,7)
   F (5,6)
   G (7,0)
   H (3,-3)
   I (0,-6)
   J (-6,-5)
   K (-8,0)
   L (0,0)
   M (0,7)
   N (-3,0)
   O (0,-2)
8. (on graph paper)
9. a) negative, positive
   b) positive, positive
   c) positive, negative
   d) negative, negative
10. a) I
    b) IV
    c) II
    d) III
    e) I
    f) II
    g) III
    h) IV
11. y coordinate OR second coordinate
12. x coordinate OR first coordinate
13. a) y
    b) x
    c) x
    d) y
    e) x
    f) x
    g) y
    h) y
    i) x
    j) y
14. Origin does not lie in any quadrant, any points on x or y-axis do not belong to any quadrant.
15. The origin lies on both axes.

8.



D.3

1. a) yes
b) yes
c) no
d) yes
e) no
f) yes
g) yes
h) yes
i) no
j) no
k) no

2. a) 30
b) 9
c) 3.5
d) 15
e) 22.5
f) 27.75
g) 4.21
h) 36
i) 25
j) 4.61
k) 4
l) 3.87
m) 6.48
n) 10.25
o) 6.32
p) 4.69
q) 7.68
r) 11
s) 9

D.4

1. a) 1.8 cm
b) 12
2. 4.5 cm
3. 26.67 hours
4. 3 mg
5. 15
6. a) 60
b) 80
c) 28 800
7. 1600 cm or 16 m
8. 13.[illegible]7 hours
9. 240 kPa
10. 14 400 L
11. 18 L
12. 168 km
13. $1.20
14. ≐ 1 hour 25 minutes
15. ≐ 124 minutes or 2 hours 4 minutes
16. $18.46
17. 28 800
18. 3733 1/3
19. 270 m^2
20. 2526 items

OP.I. OPERATION OF AND APPLICATIONS FOR TEN-KEY PRINTING CALCULATORS

NOTES FOR TEACHERS

The Number Keyboard and Addition

1. Ask the students to turn on the calculator and advance the paper for 5 strokes. Set the decimal placement control to Add.

2. Ask the students to press the total key with the fifth finger and explain that this key must be pressed at the beginning of each column of figures.

3. Place the transparency of the keyboard on the overhead. Explain the touch method. Introduce the homerow keys 4, 5 & 6. Have the students note that the 5 key feels different than the others. This is done to indicate where the 5 key is without looking at the keyboard.

4. Using the transparency, do a short problem with the students as follows:

```
Press total
444 +
555 +
666 +
444 +
555 +
666 +
Press total
```

5. Ask the students to check the accuracy of the tape as follows prior to verifying the answer.

Tape

```
 0.00 *
 4.44 + ✓
 5.55 + ✓
 6.66 + ✓
 4.44 + ✓
 5.55 + ✓
 6.66 + ✓
33.30 *
```

6. Assign Exercise 1.

7. Introduce the 8 and 2 keys, using the overhead transparency.

```
Press total
585 +
525 +
585 +
525 +
press total
```

8. Ask the students to check the accuracy of the tape as follows, prior to verifying the answer. Use a check mark.

Tape

0.00 *
5.85 + ✓
5.25 + ✓
5.85 + ✓
5.25 + ✓
22.20 *

9. Assign Exercise 2.

10. Introduce the 1 and 7 keys, using the overhead transparency. Ask the students to place their fingers on the homerow.

Press total

474 +
414 +
477 +
411 +
471 +
417 +
Press total

11. Ask the students to check the accuracy of the tape as follows, prior to verifying the answer. Use a check mark.

Tape

0.00 *
4.74 + ✓
4.14 + ✓
4.77 + ✓
4.11 + ✓
4.71 + ✓
4.17 + ✓
26.64 *

12. Assign Exercise 3.

13. Introduce the 3 and 9 keys, using the overhead transparency. Ask the students to place their fingers on homerow.

Press total

666 +
696 +
636 +
639 +
669 +
639 +

14. Ask the students to check the accuracy of the tape as follows, prior to verifying the answer. Use a check mark.

15. Assign Exercise 4.

16. Introduce the 0, 00 and 000 keys, using the overhead transparency. Ask the students to place their fingers on homerow and do the following problem with you.

Press total
30 +
300 +
3000 +
4000 +
400 +
40 +
Press total

17. Ask the students to check the accuracy of the tape as follows, prior to verifying the answer. Use a check mark.

0.00 *
.30 + ✓
3.00 + ✓
30.00 + ✓
40.00 + ✓
4.00 + ✓
.40 + ✓
77.70 *

18. Assign Exercises 5 to 10, both inclusive.

19. The students are now prepared to take 1 minute speed tests. Duplicate the following speed test so that each student has a copy.

Two 1-minute speed tests should be given at the beginning of each class period.

Introduce the method of dating the tape each day.

9.0282 press # (represents Sept 2/82)

SPEED TEST (Set the decimal placement control to Add.)

Row

1		2		3		4		5	
36.48		73.79		45.00		50.95		23.45	
52.98		65.82		13.00		71.20		11.90	
71.90		51.00		89.24		13.00		15.00	
25.70		83.29		20.70		67.98		50.00	
17.81	20	73.00	60	32.50	100	87.40	140	90.00	180
32.85		68.74		24.00		22.12		18.32	
39.82		53.74		31.00		76.08		10.00	
70.00		78.92		20.00		54.38		91.40	
34.56		30.00		60.00		72.10		40.50	
16.31	40	18.04	80	33.00	120	50.05	160	74.10	200
398.41*		596.34*		368.44	120	565.26*		424,67*	

MATHEMATICAL OPERATIONS

Multiplication

1. Place the transparency of the keyboard on the overhead.
   Review the touch method.
   Date the tape. Set the Decimal placement to zero.

2. Introduce the method of multiplication.

   #1 25 x 30 =

   #2 39 x 78 =

   #3 79 x 88 =

3. Ask the students to check the accuracy of the tape as follows, prior to verifying the answers.

Tape

```
  #1

  25. x
  30. =
 750. *

  #2

  39. x
  78. =
3042. *

  #3

  79. x
  88. =
6952. *
```

4. Assign the Exercises A, B and C.

5. Introduce the =+ key, using the transparency.
   This method is used for checking invoice extensions.
   Set the decimal placement control to 2.
   Show a sample invoice.

   Formula: Quantity x Unit Price = Cost

6. Work through the sample problem with the students.

```
  7 lbs @ $1.50  =+
  9 cns @   .95  =+
 22 lbs @  1.70  =+
3.5 doz @  1.15  =+
```

Press total.

7. Ask the students to check the accuracy of their tape with the following answer:

Tape

```
 7.00 x
 1.50 =+
10.50 *

 9.00 x
 0.95 =+
 8.55 *

22.00 x
 1.70 =+
37.40 *

 3.50 x
 1.15 =+
 4.02 *

60.47 *
```

8. Assign Exercise D.

Subtraction

1. Place the transparency of the keyboard on the overhead.
   Review the touch method.
   Date the tape. Set the decimal placement to Add

2. Introduce the method of Subtraction, using the following samples:

```
#1

50.95 + ✓
39.89 - ✓
11.06 *
```

```
#2

109.00 + ✓
 79.82 - ✓
 29.18 *
```

```
#3

1298.75 + ✓
 397.82 - ✓
 900.93 *
```

3. Assign Exercises A, B and C.

Division

1. Place the transparency of the keyboard on the overhead
   Review the touch method.
   Date the tape. Set the decimal placement to 3.
   Number each question.

2. Introduce the method of Division using the following samples.

1. 39872,589 ÷ 72.1
2. 7986.1 ÷ 39.5
3. 4287.9821 ÷ 78.97

3. Ask the students to check the accuracy of their tape with the following answers:

```
#1

39872.589 ÷
   72.100 =
  553.017 *

#2

 7986.100 ÷
   39.500 =
  202.179 *

#3

 4287.9821÷
   78.970 =
   54.298 *
```

4. Assign Exercises A and B.

Constant Multiplication and Constant Division

The electronic calculator has built-in functions for performing constant multiplication and constant division. This function is a fast and efficient method of multiplying many multipliers by the same multiplicand or dividing many dividends by the same divisor.

1. Place the transparency of the keyboard on the overhead projector.

2. Set the decimal placement control to zero.

3. Demonstrate and have the students work through the following problems. Date the tape and number the questions.

4. In order to multiply five multipliers by the multiplicand 52, 52 must be entered first with the X key then all the multipliers can be entered by using the = key only.

1. a) 52 x 642
   b) 52 x 783
   c) 52 x 585
   d) 52 x 648

Tape

```
   52 x
  642 =
33384 *
  783 =
40716 *
  585 =
30420 *
  648 =
33696 *
```

2. a) 50 x 150
   b) 50 x 200
   c) 50 x 250
   d) 50 x 300

Tape

```
    50 x
   150 =
 7 500 *
   200 =
10 000 *
   250 =
12 500 *
   300 =
15 000 *
```

5. Have the students repeat Questions 1 and 2 while you check their procedure.

6. Assign Exercise A

7. Demonstrate and have the students work through the following division problems.

8. In order to divide six dividends by 50, the first dividend is entered with the division key and the remaining dividends are entered with the equal key.

1. a) 300 ÷ 50
   b) 500 ÷ 50
   c) 600 ÷ 50
   d) 700 ÷ 50
   e) 800 ÷ 50
   f) 1000 ÷ 50

2. a) 120 ÷ 60
   b) 360 ÷ 60
   c) 420 ÷ 60
   d) 480 ÷ 60
   e) 1200 ÷ 60

Tape #1

```
  300 ÷
   50 =
    6 *
  500 =
   10 *
  600 =
   12 *
  700 =
   14 *
  800 =
   16 *
1 000 =
   20 *
```

Tape #2

```
  120 ÷
   60 =
    2 *
  360 =
    6 *
  420 =
    7 *
  480 =
    8 *
1 200 =
   20 *
```

9. Have the students repeat questions 1 and 2 while you check the procedure.

10. Assign Exercise B.

Calculate Cash Discounts

1. Place a transparency of the keyboard on the overhead projector.

2. The students are to calculate the cash discount by using the % key and the net amount by using the minus key.

3. Set the decimal placement control on 2. Demonstrate the correct method.

1. a) Gross amount $150.00
   Discount 3%

Calculate Cash Discounts

b) Gross amount $500.00
Discount 2%

c) Gross amount $295.00
Discount 2½%

Tape #1

```
150.00 x
  3.00 %
  4.50 *   (discount)
press -
145.50 %M  (net amount)

500.00 x
  2.00 %
 10.00 *
press -
490.00 %M

295.00 x
  2.50 %
  7.38 *
press -
287.62 %M
```

4. Have the students repeat Question #1 while you check the procedure.

5. Assign Exercise A.

Calculate Sales Tax

1. Place the transparency of the keyboard on the overhead projector.

2. The students are to calculate the sales tax using the % key and the total amount owing by pressing the + key.

3. Set the decimal placement control to 2. Demonstrate the correct method for the following samples.

1. a) Amount of Sale $75.50
Sales tax 5%

b) Amount of Sale $ 3.95
Sales tax 5%

c) Amount of Sale $150.00
Sales tax 5%

d) Amount of Sale $ 22.50
Sales tax 5%

Tape #1

```
 75.50 x
  5.00 %
  3.78 *   (sales tax)
press +
 79.28 %A  (total owing)

  3.95 x
  5.00 %
   .20 *
press +
  4.15 %A

150.00 x
  5.00 %
  7.50 *
press +
157.50 %A

 22.50 x
  5.00 %
  1.13 *
press +
 23.63 %A
```

4. Have the students repeat Question 1 while you check on the procedure.
5. Assign Exercise A.

Complete the Invoice

1. Place the transparency of the keyboard on the overhead projector.
2. The students will combine the methods of calculating extensions, cash discounts and sales tax to complete the sample invoice.
3. Hand out a copy of the Sample invoice to each student.
4. Advise the students that the invoice was paid on June 9th.
5. Set the decimal placement control to 2.

TOWNE PAINTS

Sold to: J. Carlisle

Terms: 3/10, n/30

Date: June 1, 19__.

Quantity	Description	Unit Price	Amount
5	Exterior latex paint	$ 20.00	$______
1	Varathane	22.50	______
3	Paint brushes	5.75	______
1	Paint scraper	3.50	______
2	Polyfilla	1.20	______

Price $______

Less: Discount ______

Net Price ______

Plus Sales Tax 5% ______

Total amount owing $______

Tape for Invoice

```
    5.00 x
   20.00 =+
  100.00 *

    1.00 x
   22.50 =+
   22.50 *

    3.00 x
    5.75 =+
   17.25 *

    1.00 x
    3.50 =+
    3.50 *

    2.00 x
    1.20 =+
    2.40 *

Press total

145.65 *          (price)

Press x
  3.00 %
  4.37 X          (discount)

Press -
141.28 %M         (net price)

Press x
  5.00 %
  7.06 *          (sales tax)

Press +
148.34 %A         (total amount owing)
```

6. Ask the students check all entries prior to verifying the correct answers.

7. Ask the students repeat the procedure for calculating the amount owing on the sample invoice.

8. Assign Exercise A.

ADDITION EXERCISES

Instructions

1. Repeat each question until it can be performed 2 times without an error.
2. Set decimal placement control to add.
3. When you have finished the addition or when the class period ends, space the paper up 6 times and tear it off.
4. Print your name at the top, fold the paper properly and hand it in.

1.	0.00*	0.00*	0.00*	0.00*
	4.44	5.66	4.54	6.55
	5.55	5.54	5.45	5.64
	6.66	4.55	4.65	6.44
	6.66	4.56	5.65	6.54
	4.44	5.66	6.46	5.56
	5.55	5.66	6.46	4.45
	5.55	6.64	6.64	6.64
	4.44	6.64	4.46	6.45
	4.44	4.55	5.45	4.45
	47.73	49.46	49.76	52.72

2.	0.00*	0.00*	0.00*	0.00*
	.58	5.25	5.22	52.88
	.55	5.55	5.88	25.25
	.52	5.85	5.55	82.52
	.55	5.22	8.82	28.52
	.25	2.55	2.28	52.25
	.28	2.52	8.52	82.25
	.52	2.22	2.58	55.88
	.82	8.88	5.28	22.55
	.22	8.28	8.25	82.85
	.55	5.28	8.88	85.82
	.88	8.28	2.22	55.55
	5.72	59.88	63.48	626.32

3.	0.00*	0.00*	0.00*	0.00*
	.41	4.14	7.77	11.44
	.41	1.41	1.11	11.77
	.47	1.71	4.44	14.74
	.47	7.17	7.17	17.44
	.44	4.11	4.14	41.74
	.14	4.17	1.71	47.41
	.17	4.44	1.41	44.77
	.71	7.77	1.44	71.41
	.74	7.44	4.41	74.17
	.77	7.47	1.77	74.47
	.11	1.14	7.71	47.14
	4.84	50.97	43.08	456.50

4.	0.00*	0.00*	0.00*	0.00*
	.33	3.36	6.39	33.99
	.33	3.63	3.69	66.33
	.66	3.66	9.63	63.69
	.66	6.63	9.36	36.39
	.99	6.36	9.93	93.39
	.99	6.33	3.39	39.99
	.36	9.69	6.96	63.39
	.63	9.39	3.96	96.36
	.69	9.33	3,99	93.96
	.96	9.93	6.63	39.96
	.39	9.96	6.99	93.39
	.93	3.93	3.39	69.63
	7.92	82.20	74.31	790.47

5.	0.00*	0.00*	0.00*	0.00*	0.00*
	.10	1.01	1.40	1.20	14.04
	.40	4.04	1.70	4.50	17.07
	.70	7.07	2.50	7.80	25.05
	.20	2.02	2.80	3.20	28.08
	.50	5.05	3.60	6.50	39.09
	.80	8.08	3.90	9.80	36.06
	.30	3.03	1.90	7.30	30.70
	.60	6.06	3.70	9.10	10.90
	.90	9.09	1.80	8.60	50.30
	.70	7.07	3.40	8.40	60.40
	.80	8.08	2.80	6.40	90.30
	6.00	60.60	29.50	72.80	401.99

6.	0.00*	0.00*	0.00*	0.00*	0.00*
	1.00	10.01	14.00	100.12	783.00
	4.00	40.04	17.00	400.45	592.00
	7.00	70.07	25.00	700.78	183.00
	2.00	20.02	28.00	300.32	753.00
	5.00	50.05	36.00	600.65	951.00
	8.00	80.08	39.00	900.98	456.00
	3.00	30.03	19.00	700.37	157.00
	6.00	60.06	37.00	200.91	953.00
	9.00	90.09	18.00	500.86	759.00
	6.00	70.07	34.00	800.84	486.00
	9.00	40.04	28.00	600.64	351.00
	60.00	560.56	295.00	5806.92	6424.00

7.	0.00*	0.00*	0.00*	0.00*	0.00*
	10.00	100.01	140.00	1000.12	7830.00
	40.00	400.04	170.00	4000.45	5920.00
	70.00	700.07	250.00	7000.78	1830.00
	20.00	200.02	280.00	3000.32	7530.00
	50.00	500.05	360.00	6000.65	9510.00
	80.00	800.08	390.00	9000.98	4560.00
	30.00	300.03	190.00	7000.37	1570.00
	60.00	600.06	370.00	2000.01	9530.00
	90.00	900.09	180.00	5000.86	7590.00
	60.00	700.07	340.00	8000.84	4860.00
	90.00	400.04	280.00	6000.64	3510.00
	600.00	5600.56	2950.00	58006.92	64240.00

8.	0.00*	0.00*	0.00*	0.00*	0.00*
	4.00	21.15	5.00	6000.10	25.00
	1.35	15.50	300.09	1200.74	109.30
	3.05	60.90	220.30	750.00	4007.38
	1.20	75.00	450.47	110.90	5600.00
	6.70	10.02	78.65	50.00	2000.00
	1.00	34.40	350.40	5000.72	7801.00
	1.45	61.60	989.00	1770.04	9040.20
	7.30	92.00	300.00	7009.50	6006.00
	5.00	40.03	505.05	4.00	8000.00
	9.05	57.80	780.00	3500.10	10500.00
	40.10	468.40	3978.96	25396.10	53088.88

9.	0.00*	0.00*	0.00*	0.00*
	5.95	15.97	100.00	37.85
	1.71	75.30	100.09	41.59
	3.83	80.43	700.33	800.00
	9.39	40.09	159.00	102.03
	1.59	16.00	700.53	98.73
	9.51	70.09	360.80	969.52
	7.53	10.09	789.00	434.89
	8.19	24.93	100.56	509.13
	3.57	66.07	428.09	300.07
	4.68	31.20	341.00	950.10
	3.72	10.03	500.30	427.80
	1.67	15.90	900.00	175.70
	61.34	456.10	5179.70	4847.41

10.	0.00*	0.00*	0.00*
	652.30	568.03	687.50
	1833.55	1343.40	502.70
	9.93	513.75	1146.75
	225.00	21.35	901.40
	2500.46	3.25	400.70
	55.80	3800.21	11.00
	106.40	8000.80	800.00
	200.07	605.25	658.88
	4000.93	96.47	1238.92
	1278.00	343.46	8606.80
	112.72	40.09	670.08
	71.08	7.32	2779.43
	11046.24	15343.38	18404.16

MULTIPLICATION EXERCISES

Instructions

1. Date the calculator tape.
2. Set the decimal placement control to zero.
3. Perform the following multiplication on the calculator.
4. Number each question.
5. When complete, hand in your tape, properly folded.

A.
1. 45 x 62
2. 456 x 698
3. 12 x 2358
4. 20 001 x 980
5. 87 x 695
6. 58 x 1237
7. 458 x 23
8. 10 005 x 605
9. 567 x 32
10. 82 x 695

B. Set the decimal placement control to 2.

1. 2500 x 56
2. 45 x 56.2
3. 781 x 56.11
4. 56.12 x 92.33
5. 2000 x 55.369
6. 314 x 569.23
7. 560 000 x 12
8. 12.65 x 5.99
9. 5007.20 x 1717.44
10. 129.55 x 56.339

C. Set the decimal placement control to 3.

1. 15.97 x 400.991
2. 45.26 x .569
3. 1.2395 x .996
4. 59.336 x .666
5. 45.89 x .0258
6. 45.996 x 3.698
7. 79 x .3978
8. 9.467 x 3008.236
9. .56 x .7895
10. 343.550 x 5.268

D. Instructions

1. Set the decimal placement control to 2.
2. Use the =+ key to perform the following multiplication.
3. Number each question.

1.

CAMP'S **WHOLESALE**
SOLD TO: T. Scott

4 Kg	Cheese @ 5.25		
25 Kg	sugar @ 8.40		
13 Kg	tomatoes @ 1.69		
10 CTN	salmon @ 56.95		
	TOTAL		

2.

CAMP'S **WHOLESALE**
SOLD TO: M. SCHARF

5 CTNS	VEG. SOUP @ 60.00		
18½ kg	Bacon @ .96		
15 Kg	STEAK @ 5.95		
	TOTAL		

3.

CAMP'S **WHOLESALE**
SOLD TO: D. BROOKS

75 doz	ORANGES @ .50		
6 CTN	SOUP @ 66.35		
10 BAG	CARROTS @ 56.50		
15 L	maple syrup @ 6.95		
	TOTAL		

4.

CAMP'S **WHOLESALE**
SOLD TO: E. DEAMEL

5 Kg	COFFEE @ 57.50		
6 BAG	POTATOES @ 51.85		
6 CTN	SUGAR @ 148.00		
20 CTN	SALMON @ 56.25		
	TOTAL		

5.

CAMP'S **WHOLESALE**
SOLD TO: W. CAMPBELL

125 CTN	CEREAL @ 5.30		
175 CTN	CANNED HAM @ 500.60		
12 CAN	SOFT DRINKS @ .50		
72 Box	DETERGENT @ 9.99		
	TOTAL		

6.

CAMP'S **WHOLESALE**
SOLD TO: J. MARO

50 Kg	STEAK @ 13.50		
5 CTN	HANDCLEANER @ 45.78		
9½ Kg	ORANGES @ 8.34		
25 BAG	POTATOES @ 19.84		
	TOTAL		

7.

CAMP'S **WHOLESALE**
SOLD TO: S. LESLEY

10 Box	PAPER TOWEL @ 29.50		
16 Kg	HAMBURGER @ 5.95		
22 CTN	TUNA @ 44.50		
2¾ kg	TOMATOES @ 3.95		
10 L	MILK @ 1.19		
	TOTAL		

8.

CAMP'S **WHOLESALE**
SOLD TO: D. FALLIS

8 CTN	SOUP @ 37.50		
9 Kg	STEAK @ 5.65		
100 Box	DETERGENT @ 4.55		
8 CTN	SALMON @ 88.50		
13 Box	DETERGENT @ 9.99		
	TOTAL		

9.

CAMP'S **WHOLESALE**
SOLD TO: C. McELROY

2 CTN	BACON @ 72.50		
16 CTN	PAPER TOWEL @ 40.65		
3 Kg	STEAK @ 9.45		
12 CTN	COFFEE @ 264.35		
	TOTAL		

10.

CAMP'S **WHOLESALE**.
SOLD TO: E. ENS

5 Kg	BACON @ 4.55		
9 doz	EGGS @ .50		
78 CTN	TEA @ 100.00		
4½ Kg	HAM @ 6.35		
9 CTN	SOUP @ 45.99		
	TOTAL		

SUBTRACTION EXERCISES

Instructions

1. Date the calculator tape.
2. Set decimal placement control to 2.
3. Number each question and check the accuracy of each question.
4. When complete, hand in your tape, properly folded.

A.

1. 20.00
-19.80
2. 7.50
-6.49
3. 15.98
-14.78
4. 4.00
-1.00
5. 40.00
-37.40
6. 136.59
-185.62
7. 278.59
-185.92
8. 144.60
- 5.59
9. 118.45
- 25.98
10. 27 000.25
- 3 992.80

B. Set the decimal placement control to F.

1. 27 000
- 1 980
2. 4225.98
-2010.3
3. 2956.33
- 56.998
4. 19.95
- 7.6588
5. 20.456
-18.974
6. 17.9856
- 5.12
7. 1.956
-1.47
8. 179.56
- .2398
9. 1008.236
-1000.9
10. 748.5698
- 4.5688

C. Set the decimal placement control to zero

1. 48 900
- 7 460
2. 13 340
- 5 400
3. 13 500
2 600
4. 70 660
-14 000
5. 9 600
-18 000
6. 240
- 30
7. 165
- 25
8. 5300
- 60
9. 699
-125
10. 3000
-1955

DIVISION EXERCISES

Instructions:

1. Date the calculator tape.
2. Set the decimal placement control to 2.
3. Number each question.
4. When exercises are complete, hand in your tape, properly folded.

A. 1. 498.5 ÷ 74.6
2. 133.2 ÷ 141.0
3. 240 ÷ 36
4. 56.98 ÷ 5
5. 456.98 ÷ 45.32
6. 698.75 ÷ 48
7. 288.98 ÷ 56.32
8. 12.5 ÷ 36.0
9. 2256.98 ÷ 125.66
10. 706.6 ÷ 56

B. Set the decimal placement control on 1.

1. 89 ÷ 5
2. 560 ÷ 45
3. 7800 ÷ 123
4. 306 ÷ 97
5. 826 ÷ 13
6. 707 ÷ 4
7. 605 ÷ 78
8. 588 ÷ 56
9. 5288 ÷ 88
10. 8522 ÷ 33

CONSTANT EXERCISES

Instructions:

1. Place the decimal placement control to proper position.
2. Use the constant multiplication method.

A. 1. a) 70 × 36
b) 70 × 92
c) 70 × 100
d) 70 × 150

2. a) 15 × 25
b) 15 × 35
c) 15 × 45
d) 15 × 55

3. a) 25 × 9.50
b) 25 × 10.25
c) 25 × 8.80
d) 25 × 15.25

4. a) 16 × 8
b) 16 × 10
c) 16 × 12
d) 16 × 14

5. a) 20 × 7.50
b) 20 × 14.25
c) 20 × 20.75
d) 20 × 50.25

B. Use the constant division method.

1. a) 700 ÷ 1.25
b) 900 ÷ 1.25
c) 1100 ÷ 1.25
d) 1500 ÷ 1.25

2. a) 888 ÷ 4.40
b) 1002 ÷ 4.40
c) 1220 ÷ 4.40
d) 1880 ÷ 4.40

3. a) 450 ÷ 2.20
b) 600 ÷ 2.20
c) 750 ÷ 2.20
d) 800 ÷ 2.20

4. a) 1550 ÷ 5.25
b) 1800 ÷ 5.25
c) 1950 ÷ 5.25
d) 2025 ÷ 5.25

5. a) 7280 ÷ 30
b) 8760 ÷ 30
c) 12 450 ÷ 30
d) 15 505 ÷ 30

CASH DISCOUNTS

Instructions:

1. Calculate the discount and net price using the proper method.
2. Place decimal placement control in proper position.

	Price	Discount	Amount of Discount	Net Price
1.	$ 56.00	2%	________	________
2.	75.00	3%	________	________
3.	62.50	2 1/2%	________	________
4.	175.25	1%	________	________
5.	1250.90	3%	________	________
6.	1000.00	2 1/4%	________	________
7.	95.00	3%	________	________
8.	272.50	2 1/2%	________	________
9.	720.35	1 1/2%	________	________
10.	615.39	3 1/4%	________	________

SALES TAX

Instructions:

1. Calculate the sales tax and total price using the proper method.
2. Place the decimal placement control in the proper position.

	Price	Sales Tax	Amount of Tax	Net Price
1.	$ 75.00	5%	________	________
2.	32.50	6%	________	________
3.	129.75	8%	________	________
4.	1000.00	5%	________	________
5.	1595.95	5%	________	________
6.	1700.00	8%	________	________
7.	1700.00	5%	________	________
8.	920.50	5%	________	________
9.	675.95	6%	________	________
10.	675.95	7%	________	________

Complete the Invoices

NOTE: All invoices are paid within the discount period.
Sales tax is charged at the rate of 5%.

#1

MANITOBA SHOPPING CENTRE

Sold to: G. Vampire Terms: 2/10, n/30 **Date:** Mar. 30

Qty.	**Description**	**Price**	**Amount**
1	Lawnmower	235.00	
3	Flowerpots	7.00	
4	Picture frames	5.00	
	Total		
	Less: Discount		
	Net Price		
	Plus: Sales Tax		
	Total Owing		

#2

MANITOBA SHOPPING CENTRE

Sold to: M. Seary Terms: 3/10, n/30 **Date:** Mar. 30

Qty.	**Description**	**Price**	**Amount**
4	Lawn chairs	30.00	
3	Sun loungers	75.00	
1	Umbrella	112.50	
1	Table & cover	42.50	
	Total		
	Less: Discount		
	Net Price		
	Plus: Sales Tax		
	Amount Owing		

#3

MANITOBA SHOPPING CENTRE

Sold to: E. Scott Terms 2/10, n/30 Date: Apr. 2

Qty.	Description	Price	Amount
1	Fielder's glove	26.75	
1	Catcher's mitt	39.50	
1	First base glove	42.75	
5	baseball bats	9.50	
10	baseballs	4.50	
	Total		
	Less: Discount		
	Net Price		
	Plus: Sales Tax		
	Amount Owing		

#4

WINNIPEG HARDWARE

Sold to: G. Hamson Terms: 2/10, n/30 **Date:** Feb 2

Qty.	Description	Price	Amount
2	Heavy duty batteries	$ 82.95	
3	Battery hydrometer	5.25	
1	Timing light	45.95	
1	Digital analyzer	115.95	
	Total		
	Less Discount		
	Net Price		
	Plus Sales Tax		
	Total Owing		

#5

MANITOBA SHOPPING CENTRE

Sold to: A. Sapstein Terms: 2/10, n/30 Date: Mar. 8

Qty.	Description	Price	Amount
4	tumblers	$1.95	
2	stainless steel flatware sets	24.50	
2	glass baking dishes	3.95	
2	muffin pans	4.25	
	Total		
	Less: Discount		
	Net Price		
	Plus: Sales Tax		
	Total Owing		

#6

MANITOBA SHOPPING CENTRE

Sold to: A. Carroll Terms: 3/10,n/30 Date: Mar. 15

Qty.	Description	Price	Amount
2	Garbage cans	$ 16.75	
2	Garden hoses	13.50	
4	Exterior latex paint	23.50	
2	Wood stain	19.95	
	Total		
	Less: Discount		
	Net Price		
	Plus: Sales Tax		

Answer Key

Multiplication Exercises

A. 1. 2790
2. 318 288
3. 28 296
4. 19 600 980
5. 60 465
6. 71 746
7. 10 534
8. 6 053 025
9. 18 144
10. 56 990

B. 1. 140 000.00
2. 2529.00
3. 43 821.91
4. 5181.55
5. 110 738.00
6. 178 738.22
7. 6 720 072.00
8. 75.77
9. 8 599 565.56
10. 7298.71

C. 1. 6403.826
2. 25.752
3. 1.234
4. 39.517
5. 1.183
6. 170.093
7. 31.426
8. 28 478.970
9. 0.442
10. 1809.821

D. 1. 21.00
210.00
21.97
569.50
822.47

2. 300.00
17.76
89.25
407.01

3. 37.50
398.10
565.00
104.25
1104.85

4. 287.50
311.10
888.00
1125.00
2611.60

5. 662.50
87 605.00
6.00
719.28
88 992.78

6. 675.00
228.90
79.23
495.00
1478.13

7. 295.00
95.20
979.00
10.86
11.90
1391.96

8. 300.00
50.85
455.00
708.00
129.87
1643.72

9. 145.00
650.40
28.35
3172.20
3995.95

10. 22.75
4.50
7800.00
28.57
413.91
8269.73

Subtraction Exercises

A. 1. .20
2. 1.01
3. 1.20
4. 3.00
5. 2.60
6. 49.03 Cr
7. 92.67
8. 139.01
9. 92.47
10. 23 007.45

B. 1. 25 020
2. 2 215.68
3. 2 899.332
4. 12.2912
5. 1.482
6. 12.8656
7. .486
8. 179.3202
9. 7.336
10. 744.00092

C. 1. 41 440
2. 7940
3. 10 900
4. 56 660
5. 8400
6. 210
7. 140
8. 5240
9. 574
10. 1045

Division Exercises

A. 1. 6.68
2. .94
3. 6.66
4. 11.39
5. 10.08
6. 14.55
7. 5.13
8. .34
9. 17.96
10. 12.61

B. 1. 17.8
2. 12.4
3. 63.4
4. 3.1
5. 63.5
6. 176.7
7. 7.7
8. .7
9. 60
10. 258.2

Constants

A. 1. a) 2520
b) 6440
c) 7000
d) 10 500

2. a) 375
b) 525
c) 675
d) 825

3. a) 237.50
b) 256.25
c) 220.00
d) 381.25

4. a) 128
b) 160
c) 192
d) 224

5. a) 150.00
b) 285.00
c) 415.00
d) 1005.00

B. 1. a) 560.00
b) 720.00
c) 880.00
d) 1200.00

2. a) 201.82
b) 227.73
c) 277.27
d) 427.27

3. a) 204.55
b) 272.73
c) 340.91
d) 363.64

4. a) 295.24
b) 342.86
c) 371.43
d) 385.71

5. a) 343
b) 292
c) 415
d) 517

Cash Discounts

	Amount of Discount	Net Price
1.	1.12	54.88
2.	2.25	72.75
3.	1.56	60.94
4.	1.75	173.50
5.	37.53	1213.37
6.	22.50	977.50
7.	2.85	92.15
8.	6.81	265.69
9.	10.81	709.54
10.	20.00	595.39

Sales Tax

	Amount of Tax	Total Price
1.	3.75	78.75
2.	1.95	34.45
3.	10.38	140.13
4.	50.00	1050.00
5.	79.80	1675.75
6.	136.00	1836.00
7.	85.00	1785.00
8.	46.03	966.53
9.	40.56	716.51
10.	47.32	723.27

Complete the Invoices

1.

	235.00
	21.00
	20.00
Total	276.00
Discount	5.52
Net Price	270.48
Sales Tax	13.52
Total Owing	284.00

2.

	120.00
	225.00
	112.50
	42.50
Total	500.00
Discount	15.00
Net Price	485.00
Sales Tax	24.25
Total Owing	509.25

3.

	26.75
	39.50
	42.75
	47.50
	45.00
Total	201.50
Discount	4.03
Net Price	197.47
Sales Tax	9.87
Total Owing	207.34

4.

	165.90
	15.75
	45.95
	115.95
Total	343.55
Discount	6.87
Net Price	336.68
Sales Tax	16.83
Total Owing	353.51

5.

	7.80
	49.00
	7.90
	8.50
Total	73.20
Discount	1.46
Net Price	71.74
Sales Tax	3.59
Total Owing	75.33

6.

	33.50
	27.00
	94.00
	39.90
Total	194.40
Discount	5.83
Net Price	188.57
Sales Tax	9.43
Total Owing	198.00

OP.11. FINANCIAL OPERATIONS

A.1 1. Find the maturity date of each of the following promissory notes.

	Date of Note	Term	Maturity Date
a)	March 1	1 year	
b)	July 25	30 days	
c)	August 15	90 days	
d)	March 15	1 month	
e)	September 10	60 days	
f)	October 31	2 months	
g)	May 5	75 days	
h)	July 3	120 days	
i)	December 15	30 days	
j)	April 10	6 months	

2. Calculate the interest on the following promissory notes and the value of the note at maturity.

	Face of Note	Term	Interest Rate	Interest on Note	Value at Maturity
a)	$ 810	30 days	10%		
b)	$1500	60 days	14%		
c)	$1800	90 days	12%		
d)	$ 500	70 days	16%		
e)	$1000	75 days	15%		
f)	$2000	40 days	18%		
g)	$1400	30 days	13%		
h)	$1200	60 days	12%		
i)	$ 400	30 days	16%		
j)	$ 600	120 days	15%		

3. Scott Rees placed a customer's 45-day 12% note for $750 at his bank for deposit. The bank collected the total amount due and credited the amount to Scott's bank account. Calculate the amount credited to his account.

4. Colleen Horn has a balance of $1730.15 in her account. Colleen deposited a 90-day 13% note for $875 in her bank account. The bank collected the total amount due and credited it to her account. What was her new account balance?

A.2 1. Calculate the proceeds of each of the following interest-bearing notes discounted at the bank.

	Face of Note	Interest Rate	Date of Note	Term of Note	Discount Date	Discount Rate
a)	$ 500	10%	Mar. 1	2 months	Mar. 15	12%
b)	$ 800	12%	June 3	30 days	June 10	12%
c)	$1000	14%	July 10	120 days	Aug. 15	15%
d)	$ 400	15%	May 5	60 days	May 20	16%
e)	$2000	16%	Mar. 15	3 months	Apr. 10	15%
f)	$1200	12%	July 1	90 days	July 21	13%
g)	$1500	18%	June 10	70 days	July 15	16%
h)	$ 900	15%	Apr. 10	60 days	May 3	17%
i)	$1400	12%	Nov. 1	2 months	Nov. 15	14%
j)	$1000	16%	June 1	90 days	June 20	17%

2. J. A. Wilson is the owner of a 90-day 12% note made in her favour for $1200 dated July 5. Wilson discounted the note on July 22 at 14%. What amount did Wilson receive as the proceeds of the note?

3. G. Stephenson has a current balance at the bank of $1200. Stephenson discounted, on September 10, a note for $600 from a customer. The note was for 60 days and was dated August 15. The interest on the note was 14% while the bank discount rate was 16%. How much did Stephenson have in the account after the proceeds of the note were deposited in the account?

A.3 1. Find the proceeds of each of the following non-interest-bearing notes discounted at the bank.

	Face of Note	Date of Note	Term of Note	Discount Date	Discount Rate
a)	$ 575	June 5	50 days	June 17	13%
b)	$ 650	May 1	90 days	May 21	15%
c)	$1000	Aug. 1	120 days	Aug. 26	14%
d)	$1500	Nov. 1	30 days	Nov. 5	17%
e)	$1300	Mar. 1	3 months	Mar. 18	16%
f)	$1200	July 4	2 months	July 27	15%
g)	$ 800	Oct. 5	60 days	Oct. 17	12%
h)	$ 500	Mar. 15	4 months	Apr. 10	13%
i)	$1400	June 10	60 days	June 24	15%
j)	$1700	May 15	90 days	May 31	14%

2. Gary Evans discounted a 70-day non-interest-bearing note for $750 on August 10 at 15%. The note was dated August 1. Find the proceeds of the note.

3. E. W. Adair's bank balance was $812.25 on September 15. On that day Adair discounted at the bank, at 14%, a $1500 non-interest-bearing note dated September 5. The term of the note was 90 days. The bank credited the account with the proceeds of the note. What was the new amount of Adair's bank balance?

B.1 1. Calculate the estimated amounts of bad debt loss for the year and for the month for each of the following.

	Net Sales	Estimated Percent Rate	Annual Estimate	Monthly Estimate
a)	$ 120 000	1/2%		
b)	$ 88 000	2%		
c)	$ 136 000	2-1/4%		
d)	$ 150 000	3-1/2%		
e)	$2 150 000	1%		
f)	$ 65 600	1-3/4%		
g)	$ 75 400	2-1/2%		
h)	$ 536 000	3-1/4%		
i)	$ 484 462	2%		
j)	$ 176 845	3/4%		

2. Wind-Way Publishers had sales on credit of $131 650 last year. Sales returns and allowances amounted to $1550. Calculate the annual and monthly estimate of bad debt loss if, from past experience, management estimates 1-3/4% of net credit sales will be uncollectable.

3. Management of Rocky Mountain Manufacturing Ltd. estimate bad debts to be 2-1/2% of net credit sales. During the past year net credit sales totaled $256 345, and sales returns and allowances $2555. Estimate the amount of bad debt for the year and for each month.

B.2 1. Calculate the estimated amount of bad debt loss for each category. Find the estimated total bad debt loss from accounts receivable for each of the following:

Age Group in Days	Amount	Estimated Percent Rate Uncollectable	Estimated Loss (Nearest Dollar)
Over 90	$ 1 250	45%	
61 - 90	$ 2 180	25%	
31 - 60	$12 000	10%	
1 - 30	$21 540	2%	
0	$44 000	1%	
	$80 970		

2. Calculate the estimated amount of bad debt loss for each category and the estimated total bad debt loss from accounts receivable for each of the following:

Age Group in Days	Amount	Estimated Percent Rate Uncollectable	Estimated Loss (Nearest Dollar)
Over 60	$ 800	50%	
61 - 90	$ 1 300	30%	
31 - 60	$ 2 500	15%	
1 - 30	$ 6 800	3%	
0	$ 7 900	1/2%	
	$19 300		

3. Calculate the estimated amount of bad debt loss for each category and the estimated total bad debt loss from accounts receivable for each of the following.

Age Group in Days	Amount	Estimated Percent Rate Uncollectable	Estimated Loss (Nearest Dollar)
Over 90	$ 550	60%	
61 - 90	$ 1 300	30%	
31 - 60	$ 3 500	10%	
1 - 30	$ 6 000	2%	
0	$10 830	1%	
	$22 180		

4. Calculate the estimated amount of bad debt loss for each category and the estimated total bad debt loss from accounts receivable for each of the following.

Age Group in Days	Amount	Estimated Percent Rate Uncollectable	Estimated Loss (Nearest Dollar)
Over 90	$ 1 000	45%	
61 - 90	$ 2 500	25%	
31 - 60	$ 5 800	15%	
1 - 30	$ 6 300	1-1/2%	
0	$10 375	3/4%	
	$25 975		

5. Calculate the estimated amount of bad debt loss for each category and the estimated total bad debt loss from accounts receivable for each of the following.

Age Group in Days	Amount	Estimated Percent Rate Uncollectable	Estimated Loss (Nearest Dollar)
Over 90	$ 3 600	40%	
61 - 90	$ 5 800	20%	
31 - 60	$10 500	10%	
1 - 30	$12 250	3%	
0	$22 565	1%	
	$54 715		

6. Calculate the estimated amount of bad debt loss for each category and the estimated total bad debt loss from accounts receivable for each of the following.

Age Group in Days	Amount	Estimated Percent Rate Uncollectable	Estimated Loss (Nearest Dollar)
Over 90	$ 1 830	50%	
61 - 90	$ 2 600	30%	
31 - 60	$ 3 740	20%	
1 - 30	$15 630	2%	
0	$25 365	1/2%	
	$49 165		

7. The following is a list of credit customers of the Universal Manufacturing Co. Ltd. at year end on December 31. The terms of sale for this company are n/30.

It is important to remember that the accounts do not become overdue until the 31st day because the customer has 30 days in which to make his payment.

Name	Date of Invoice	Amount
Bill's Hardware	October 10	$500
John's Wholesale	July 16	$3400
Ace Industries	November 15	$1200
MacAdoo and Co.	December 10	$4000
Lanier and Sons	September 9	$2600
Wilderson Co. Ltd.	November 20	$3600
Winters Hardware	December 5	$8000
Gilly's Ltd.	November 16	$2200
Ralph Rotten and Co.	August 15	$1600
Marshall Hardware	October 10	$3200
All Other Accounts	December 17	$12 350

Given this information, complete a schedule of accounts by age and then calculate the estimated amount of bad debt loss for this firm.

Schedule of Accounts BY AGE

NAME of FIRM	AMOUNT	NOT PAST DUE	DAYS PAST DUE			
			1-30	31-60	61-90	OVER 90
TOTALS						

Age Group in Days	Total Amount	Estimated Percent Rate Uncollectable	Estimated Loss (Nearest Dollar)
Over 90		40%	
61 - 90		20%	
31 - 60		10%	
1 - 30		2%	
0		1%	
Totals			

C.1 1. Michelle Turenne went into bankruptcy owing debts totaling $47 830. The assets of the firm were sold for $25 306. How much money would be available to creditors if the bankruptcy proceedings cost $810.

2. A farmer went into bankruptcy owing debts totaling $175 600. The trustees of the bankrupt operation held an auction sale. Total sales were $56 380. The auctioneer was paid a commission of 5%. What amount of money was available for distribution to creditors?

3. A business went into bankruptcy owing debts totaling $436 000. One of the competitors of the firm purchased the assets of the operation for $180 750. Lawyer's fees and other expenses surrounding the transaction totaled $8250. What amount of money would be available to the creditors of the bankrupt company?

C.2 1. Calculate the percent rate of creditors' claims a trustee can pay given the total debts and the cash available.

	Total Owing	Cash Available
a)	$ 66 350	$ 22 160
b)	$ 135 750	$ 78 930
c)	$1 000 500	$646 000
d)	$ 536 000	$388 000
e)	$ 78 850	$ 46 540

2. Samson & Sons went into bankruptcy owing debts totaling $86 540. At a bankruptcy auction the assets were sold for $36 850. The auctioneer was paid a commission of 4% for his services. What percent rate of creditors' claims can the trustee pay?

3. Wishing Ltd. went into bankruptcy owing debts totaling $365 000. The trustees of the firm were able to sell the assets of the firm for $176 000. Legal costs surrounding the bankruptcy totaled $8200. What percent rate of creditors' claims can the trustees pay?

4. Honker Ltd. has debts totaling $472 000. At present the assets of the firm total $368 000. If the firm were to be declared bankrupt what percent rate of creditors' claims might be paid?

C.3 1. Calculate the number of cents on the dollar that can be paid to the creditors of the following bankrupt businesses.

	Total Owing	Cash Available
a)	$276 410	$183 550
b)	$182 942	$147 518
c)	$256 185	$162 000
d)	$ 98 554	$ 66 756
e)	$580 650	$315 325
f)	$835 612	$533 250

2. Candy and Co. owes debts totaling $913 525. The cash available for creditors is $636 465. How many cents on the dollar will the creditors receive?

3. A bankrupt firm has debts totaling $530 275. The assets of the firm were sold for $335 775. The legal cost of the bankruptcy proceedings was $7500. How many cents on the dollar will the creditors receive?

4. Water Systems Ltd. has debts totaling $825 643. At an auction sale the assets of the firm were sold for $633 450. The auctioneer was paid a commission of 5%. How many cents on the dollar will the creditors receive?

C.4 1. A bankrupt firm owes Black & Co. a bill of $3400. The total liabilities of the firm are $104 500. The total assets available for distribution are $28 540. How much should Black & Co. receive in settlement?

2. The debts of Williams, a bankrupt, are being paid at the rate of 72.5 cents on the dollar. How much would be paid to Odums with a claim of $865?

3. Crocker Co. Ltd. went bankrupt with liabilities of $225 436. The assets of the Company were sold for $176 350. The legal and other costs of liquidation were $6240. What amount will Bamboo receive in settlement of a claim of $648.90?

4. Smith Manufacturing Ltd. went into bankruptcy owing the following debts:

Ace Industries	$11 620.50
Mite Industries	$ 8 536.25
Once Co. Ltd.	$35 222.75
Norman Ltd.	$ 5 365.00

The cash available to the above creditors was $38 560. What amount of money would be paid to Norman Ltd.?

5. French and Co. Ltd. had liabilities totaling $136 540. The assets of the business were liquidated at a special auction sale for $77 575. The auctioneer was paid a commission of 3%. What amount will be paid to a creditor with a claim of $3330?

6. The creditors of Johnson, a bankrupt, are being paid at the rate of 62.75 cents on the dollar. Stabler, a creditor has a claim of $4250. What amount of money would he receive?

7. Burroughs, a bankrupt, has liabilities of $92 540. The assets available for distribution to creditors is $65 450. How much will be paid to Manning, a creditor, whose claim is $6530?

8. Fouts, a bankrupt, has liabilities of $236 000. The assets of the firm were sold for $185 000. The costs of legal proceedings was $4850. What amount of money would Jefferson, a creditor, receive if his total claim was $8240?

C.5

1. Markell, a bankrupt, paid creditors 44% of the amount owed to them. MacDonald, one of the creditors, received $820. What was the original amount of MacDonald's claim?

2. Given the percent rate paid to creditors and the amount paid to the creditors, calculate the original amount of claim for each of the following.

	Amount Paid	Percent Rate Paid
a)	$ 2 412.00	45%
b)	$ 5 352.60	66%
c)	$ 5 886.72	56%
d)	$ 4 858.75	62.5%
e)	$17 487.90	81%

3. Washington, a bankrupt, paid Brock, a creditor, 61% of the original claim. If Brock received $4367.60, what must have been his original claim?

4. Poper, one of the creditors of Big Mike Inc. received $3330 as a final settlement in a bankruptcy case. If Big Mike paid creditors 74% of their original claims what amount must have been Poper's original claim?

Answer Key

A.1

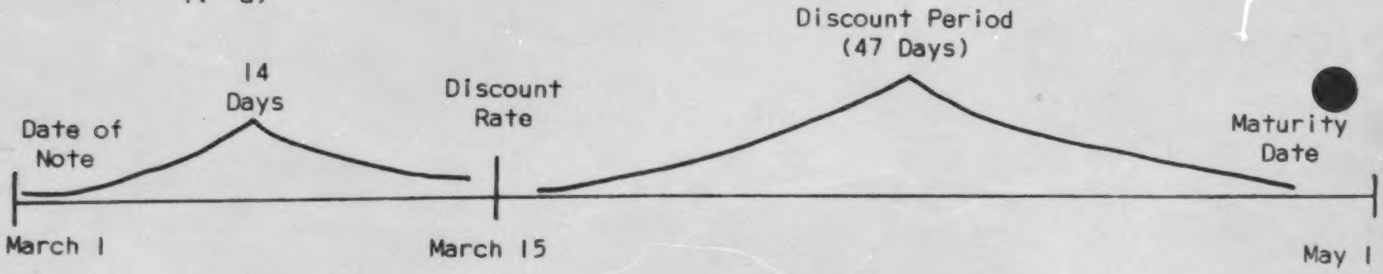
1.
- a) March 1
- b) August 24
- c) November 13
- d) April 15
- e) November 19
- f) December 31
- g) July 19
- h) October 31
- i) January 14
- j) October 10

2.
- a) $6.66; $816.66
- b) $34.52; $1534.52
- c) $53.26; $1853.26
- d) $15.34; $515.34
- e) $30.82; $1030.82
- f) $39.45; $2039.45
- g) $14.96; $1414.96
- h) $23.67; $1223.67
- i) $5.26; $405.26
- j) $29.59; $629.59

3. $761.10
4. $2633.20

A.2 It is often helpful in this section to set out the information on a time line.

1. a)



Total Number of days - 61 days

STEP 1: To calculate the value of the note if held to maturity, one must calculate the total number of days of the original note (61 days).
I = PRT
= 500 x 10% x 61/365
= $8.36
Value at maturity: $500 + 8.36 = $508.36.

STEP 2: The discount period must be calculated. In this case 14 days have elapsed since the date of the note. The note originally ran for 61 days. Therefore, there must be (61-14) 47 days to be discounted. The value at maturity must be discounted for 47 days.
Discount = Maturity Value x Rate x Time
= $508.36 x 12% x 47/365
= $7.86

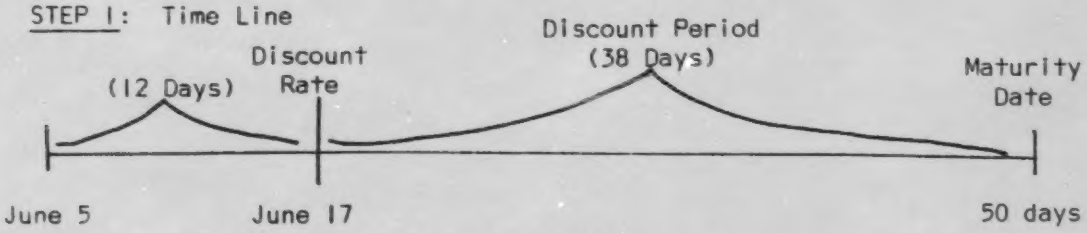
STEP 3: The proceeds of the note are found by subtracting the bank discount from the value at maturity.
$508.36 - 7.86 = $500.50.

b) $801.78
c) $1009.92
d) $401.78
e) $2024.23
f) $1204.71
g) $1527.97
h) $906.30
i) $1402.34
J) $1005.08

2. $1200.92
3. $1804.66

A.3 1. When asked to find the proceeds of a non-interest bearing note it is important to realize that the face of the note and the value at maturity are the same amount because no interest is added. Therefore it is not necessary to calculate the value at maturity before calculating bank discount.

STEP 1: Time Line



Discount Period = 50 - 12 = 38 days.

STEP 2: Calculate bank discount
Discount = Maturity Value x Rate x Time
= $575 x 13% x 38/365
= $7.78

STEP 3: Find the proceeds of the note:
$575 - 7.78 = $567.22

b) $631.30
c) $963.56
d) $1481.84
e) $1257.26
f) $1180.77
g) $787.38
h) $482.90
i) $1373.53
j) $1651.75

2. $731.20
3. $2266.22

B.1
1. a) $600; $50
   b) $1760; $146.67
   c) $3060; $255
   d) $5250; $437.50
   e) $21 500; $1791.67
   f) $1148; $95.67
   g) $1885; $157.08
   h) $17 420; $1451.67
   i) $9689.24; $807.44
   j) $1326.34; $528.73

2. $2276.75; $189.73
3. $6344.75; $528.73

B.2
1. $563; $545; $1200; $431; $440; $3179
2. $400; $390; $375; $204; $40; $1409
3. $330; $390; $350; $120; $108; $1298
4. $450; $625; $870; $95; $78; $2118
5. $1440; $1160; $1050; $368; $226; $4244
6. $915; $780; $748; $313; $127; $2883

7. See Separate Sheet

   $5000; 40%; $2000
   $2600; 20%; $520
   $3700; 10%; $370
   $7000; 2%; $140
   $24350; 1%; $244
   Totals: $42 650; $3274

C.1
1. $24 496
2. $53 561
3. $172 500

C.2
1. a) 33.4%
   b) 58.1%
   c) 64.6%
   d) 72.4%

2. 40.9%
3. 46%
4. 78%

C.3
1. a) $0.66
   b) $0.81
   c) $0.54
   d) $0.68
   e) $0.54
   f) $0.64
2. $0.70
3. $0.62
4. $0.73

Universal Manufacturing

Schedule of Accounts BY AGE

December 31 ____

NAME of FIRM	AMOUNT	NOT PAST DUE	DAYS PAST DUE			
			1-30	31-60	61-90	OVER 90
Bill's Hardware	$ 500			$ 500		
John's Wholesale	$ 3400					$ 3400
Ace Industries	$ 1200		$ 1200			
Mac Adoo and Co.	$ 4000	$ 4000				
Lanier and Sons	$ 2600				$ 2600	
Wilkerson Co Ltd	$ 3600		$ 3600			
Winter's Hardware	$ 8000	$ 8000				
Gilly's Ltd	$ 2200		$ 2200			
Ralph Rotten and Co.	$ 1600					$ 1600
Marshall Hardware	$ 3200			$ 3200		
All Other Accounts	$ 12 350	$ 12 350				
TOTALS	$ 42 650	$ 24 350	$ 7000	$ 3700	$ 2600	$ 5000

C.4
1. $928.57
2. $627.13
3. $489.65
4. $3405.65
5. $1835.18
6. $2666.88
7. $4618.42
8. $6289.98

C.5
1. $1863.64
2. a) $5360
    b) $8110
    c) $10 512
    d) $7774
    e) $21 590
3. $7160
4. $4500

OP.III. INCOME STATEMENT

A.2

1. Norman Desrochers had sales of $13 000 in his grocery store during the month of January. The sales returns and allowances for the month were $320. Calculate the amount of the store's net sales.

2. During the month of April a hardware store had sales of $15 000. Customers returned goods totaling $450 during that month. Calculate the amount of the store's net sales.

3. A gun shop had sales totaling $38 000 during the year. Customers returned $850 worth of merchandise during the year. Calculate the amount of the store's net sales.

4. A furniture dealer sold 10 bedroom suites at $550 a piece. One bedroom suite was returned. Calculate the amount of the dealer's net sales on the bedroom suites.

5. A carpet dealer sold 1500 m^2 of carpet during the month of October at a price of $31.50 a square metre. One customer returned 15 m^2 because of a defect in the carpet. Calculate the amount of the carpet dealer's net sales.

6. A bookstore had sales of $12 000 during the month of December. During that month the following items were returned: 8 books at $8.95 each; 3 books at $16.95 each; one atlas $24.50; 3 sets of pens at $11.50 each. Calculate the amount of the bookstore's net sales.

A.3

1. The records of A-1 Hardware shows the following information for the month of March: stock of goods on hand March 1, $38 760; cost of additional merchandise purchased during the period, $35 630; stock of merchandise on hand March 31, $42 850. What was the cost of goods sold?

2. Find the cost of goods sold for each of the following cases:

	Beginning Inventory	Purchases	Ending Inventory	Cost Of Goods Sold
a)	$ 7 300	$ 4 900	$ 5 250	
b)	$36 540	$14 895	$22 763	
c)	$ 1 545	$ 2 610	$ 1 834	
d)	$ 5 865	$ 7 320	$ 4 939	
e)	$17 642	$ 8 394	$ 6 463	

3. The records of Henderson's Department Store show the following information for the previous year: stock of goods on hand January 1, $46 375; stock of merchandise on hand December 31, $38 764; cost of additional merchandise purchased during the period, $27 685. Calculate the cost of goods sold for the Henderson Department Store.

4. The records of Newman's Department Store include the following information for the previous year: stock of goods on hand January 1, $82 540; cost of additional merchandise purchased during the period, $75 546; stock of merchandise on hand December 31, $56 495. Calculate the cost of goods sold for Newman's Department Store.

A.4

1. Find the gross profit (or loss) for each of the following cases. Use a negative sign to indicate a loss.

	Net Sales	Cost Of Goods Sold	Gross Profit (or Loss)
a)	$ 5 250	$ 3 860	
b)	$ 4 860	$ 5 320	
c)	$15 642	$13 236	
d)	$ 3 860	$ 4 230	
e)	$ 6 750	$ 4 386	

2. A student council purchased 50 gym bags at a cost of $9.25 each. The bags were sold to the student body for $12.75 each. Calculate the gross profit (or loss) on the entire lot.

3. A merchant purchased 50 bathing suits at a price of $4.75 each. During the summer season he sold 20 of the suits for $7.50 each. After the Labor Day Weekend he sold the remainder of the suits at his annual fall clearance sale at a price of $2.80 each. Calculate the gross profit (or loss) on the entire lot of bathing suits.

4. A merchant purchased 40 mixing bowls at a cost of $8.50 each. During the year he sold all forty of the items at a price of $12.75 each. If two items were returned because of unsatisfactory workmanship, calculate his gross profit (or loss) on the forty items.

5. B and B Department Store records the following information for the month of August: net sales, $12 420; cost of goods on hand August 1, $13 540; cost of additional merchandise purchased during the month, $8360; stock of merchandise on hand August 31, $10 560. Calculate the gross profit (or loss) for the month of August.

6. The Music Mart Record Store accounts for the previous year show net sales at $36 540; sales returns and allowances, $645; inventory January 1, $20 630; cost of merchandise purchased during the year, $15 942; stock of merchandise on hand December 31, $16 383. Calculate the store's gross profit (or loss).

7. The Happy Hobby Mart just opened for the month of September. Its records show that sales were $4360; sales returns and allowances, $475; inventory September 1, $9234; cost of merchandise purchased during the month, $5863; stock of merchandise on hand September 30, $8762. Calculate the gross profit (or loss) for the store.

A.5

1. Find the net income (or loss) for each of the following cases:

	Gross Profit	Operating Expenses	Net Income (Loss)
a)	$ 5 360	$ 3 860	
b)	$ 1 236	$ 1 875	
c)	$36 545	$22 864	
d)	$67 546	$72 885	

2. Find the gross profit (or loss) and net income (or loss) for each of the following cases:

	Net Sales	Cost Of Goods Sold	Gross Profit (Loss)	Operating Expenses	Net Income (Loss)
a)	$ 7 600	$ 5 400		$ 2 300	
b)	$ 10 590	$ 6 392		$ 2 560	
c)	$ 38 646	$15 954		$ 7 891	
d)	$ 24 757	$19 981		$ 6 320	
e)	$105 645	$69 875		$12 384	

3. The Elm High girl's volleyball team is trying to raise money for its trip to Belgium. The group decides to sell school jackets. The purchase price of seventy-five jackets is $32.50 each. The team sold the jackets at $41.75 each. Expenses such as advertising and phone calls to the manufacturer, totaled $16.35. Calculate the team's gross profit (or loss) and net income (or loss) for the entire transaction.

4. Ace Automotive Parts had sales totaling $13 000 during the month of March. Sales returns and allowances totaled $486. The cost of goods sold during the month was $9000. Calculate the firm's gross profit (or loss) and net income (or loss) for the month if operating expenses totaled $4275.

5. Find the gross profit (or loss) and net income (or loss) for each of the following situations.

	Sales	Beginning Inventory	Purchases	Ending Inventory	Operating Expenses	Gross Profit	Net Income
a)	$ 37 845	$ 90 560	$ 20 654	$ 86 434	$ 6 936		
b)	$ 62 456	$120 362	$ 46 754	$126 238	$10 540		
c)	$176 730	$295 932	$140 564	$290 568	$26 537		
d)	$ 42 106	$ 76 369	$ 47 747	$ 59 371	$ 7 935		
e)	$ 8 603	$ 10 535	$ 1 864	$ 9 460	$ 2 192		

6. Find the missing amounts in each of the following:

	Sales	Cost Of Goods Sold	Gross Profit	Operating Expenses	Net Income
a)		$ 38 705	$ 17 638		$ 8 642
b)	$110 538	$ 67 862		$ 24 636	
c)	$ 87 635	$ 48 898			$10 376
d)		$137 112	$112 626	$ 56 854	
e)	$ 84 825	$ 47 636		$ 21 132	

7. Easy-Living Department Store had the following information for the month of November: sales, $82 563; sales returns and allowances, $1534; cost of goods sold, $47 536; rent, $1232; salaries, $3240, electricity, $764; insurance, $336. Calculate the gross profit (or loss) and net income (or loss) for the month.

Project 1. Given the Income Statement answer the following questions:

a) Happy Harry's Department Store had the following information for the month of January: sales, $9000; sales returns and allowances, $350; merchandise inventory January 1, $6250; cost of additional merchandise purchased during the month, $2225; merchandise inventory January 31, $4365; salaries expense, $1230; rent expense, $725; utilities expense, $225 and insurance expense, $35. Calculate the net income (or loss) for the month of January.

b) Ralph Rotten's Department Store had the following information for the month of September: sales, $18 560; sales returns and allowances, $510; merchandise inventory September 1, $14 835; cost of additional merchandise purchased during the month, $8625; merchandise inventory September 30, $6530; salaries expense, $1540; rent expense, $1100; utilities expense, $376; and insurance expense, $50. Calculate the net income (or loss) for the month of September.

INCOME STATEMENT

Revenue from Sales:		
Sales	$	
Less: Sales Returns and Allowances	__________	
Net Sales		$
Cost of Goods Sold:		
Merchandise Inventory (beginning)	$	
Purchases for the period	$__________	
Cost of Goods Available for Sale	$	
Less: Merchandise Inventory (ending)	$__________	
Cost of Goods Sold		$__________
Gross Profit on Sales		$
Operating Expenses:		
Salaries Expense	$	
Rent Expense	$	
Utilities Expense	$	
Insurance Expense	$__________	
Total Operating Expense		$__________
Net Income (or Loss)		$__________

B Analyzing an Income Statement

B.1 Given the following three income statements, calculate the percent rate of the accounts on an income statement based on net sales.

1.

RALPH'S SPORTING GOODS

INCOME STATEMENT

For the Month Ending June 30, 19__

			Percent Rate
Revenue from Sales:			
Sales	$10 500		
Less: Sales Returns and Allowances	600		
Net Sales		$9 600	
Cost of Goods Sold:			
Merchandise Inventory (beginning)	$ 6 000		
Purchases for the period	$ 2 500		
Cost of Goods Available for Sale	$ 8 500		
Less: Merchandise Inventory (ending)	$ 4 000		
Cost of Goods Sold		$4 500	
Gross Profit on Sales		$5 100	
Operating Expenses:			
Salaries Expense	$ 1 000		
Rent Expense	$ 1 200		
Utilities Expense	$ 150		
Insurance Expense	$ 100		
Total Operating Expense		$2 450	
Net Income (or Loss)		$2 650	

2.

ART'S WHOLESALE

INCOME STATEMENT

For the Six Months Ending June 30, 19__

			Percent Rate
Revenue from Sales:			
Sales	$78 800		
Less: Sales Returns and Allowances	200		
Net Sales		$78 600	
Cost of Goods Sold:			
Merchandise Inventory (beginning)	$35 500		
Purchases for the period	$15 600		
Cost of Goods Available for Sale	$51 100		
Less: Merchandise Inventory (ending)	$18 920		
Cost of Goods Sold		$32 180	
Gross Profit on Sales		$46 420	
Operating Expenses:			
Salaries Expense	$ 7 300		
Rent Expense	$ 8 450		
Utilities Expense	$ 810		
Insurance Expense	$ 400		
Total Operating Expense		$16 960	
Net Income (or Loss)		$29 460	

3.

BOB'S DISTRIBUTORS INC.

INCOME STATEMENT

For the Year Ended December 31, 19__

			Percent Rate
Revenue from Sales:			
Sales	$153 650		
Less: Sales Returns and Allowances	590		
Net Sales		$153 060	
Cost of Goods Sold:			
Merchandise Inventory (beginning)	$100 510		
Purchases for the period	$ 82 460		
Cost of Goods Available for Sale	$182 970		
Less: Merchandise Inventory (ending)	$ 52 820		
Cost of Goods Sold		$130 150	
Gross Profit on Sales		$ 22 910	
Operating Expenses:			
Salaries Expense	$ 22 310		
Rent Expense	$ 12 650		
Utilities Expense	$ 1 500		
Insurance Expense	$ 1 200		
Total Operating Expense		$ 37 660	
Net Income (or Loss)		($ 14 750)	

4. Tiny Tot's Department Store had the following information for the month of September: sales, $20 620; sales returns and allowances, $450; merchandise inventory September 1, $14 680; cost of additional merchandise purchased during the month, $7595; merchandise inventory September 30, $6945; salaries expense, $1250; rent expense, $840; utilities expense, $196; and insurance expense, $60. Calculate the net income (loss) for the month of September and then calculate the percent rate of the accounts on the income statement based on net sales.

TINY TOT'S DEPARTMENT STORE

INCOME STATEMENT

For the Month Ended September 20, 19__

			Percent Rate
Revenue from Sales:			
Sales	$		
Less: Sales Returns and Allowances	______		
Net Sales		$	
Cost of Goods Sold:			
Merchandise Inventory (beginning)	$		
Purchases for the period	$______		
Cost of Goods Available for Sale	$		
Less: Merchandise Inventory (ending)	$______		
Cost of Goods Sold		$______	
Gross Profit on Sales		$	
Operating Expenses:			
Salaries Expense	$		
Rent Expense	$		
Utilities Expense	$		
Insurance Expense	$______		
Total Operating Expense		$______	
Net Income (or Loss)		$______	

B.2 1. Given the figures below for Wilcox Industries Ltd. prepare a comparative income statement using the percent rate of net sales for each month.

Wilcox Industries Ltd.
Comparative Income Statement
For the Months of May and June 19__

	Month Ended June 30, 19__		Month Ended May 30, 19__	
	Amount	Percent Rate	Amount	Percent Rate
Revenue from Sales:				
Sales	$ 18000 00		$ 16000 00	
Less: Sales Returns & Allowances	600 00		400 00	
Net Sales	17400 00		15600 00	
Cost of Goods Sold:				
Merchandise Inventory (beginning)	15000 00		13000 00	
Add: Purchases	3000 00		6000 00	
Cost of Goods Available for Sale	18000 00		19000 00	
Less: Merchandise Inventory (end)	14000 00		15000 00	
Cost of Goods Sold	4000 00		4000 00	
Gross Profit on Sales	13400 00		11000 00	
Operating Expenses:				
Salaries Expense	1000 00		1200 00	
Rent Expense	900 00		900 00	
Utilities Expense	800 00		740 00	
Telephone Expense	125 00		100 00	
Total Operating Expenses	2825 00		2940 00	
Net Income	$ 10575 00		$ 8060 00	

2. Given the figures below for Ennis and Sons Ltd., prepare a comparative income statement using the percent rate of net sales for each month.

Ennis and Sons Ltd.
Comparative Income Statement
For the Months of August, September 19__

	Month Ended September 30, 19__		Month Ended August 31, 19__	
	Amount	Percent Rate	Amount	Percent Rate
Revenue from Sales:				
Sales	$ 8200 00		$ 10000 00	
Less: Sales Returns & Allowances	100 00		400 00	
Net Sales	8100 00		9600 00	
Cost of Goods Sold:				
Merchandise Inventory (beginning)	5200 00		3700 00	
Add: Purchases	1700 00		6200 00	
Cost of Goods Available for Sale	6900 00		9900 00	
Less: Merchandise Inventory (end)	3500 00		5200 00	
Cost of Goods Sold	3400 00		4700 00	
Gross Profit on Sales	4700 00		4900 00	
Operating Expenses:				
Salaries Expense	600 00		800 00	
Rent Expense	450 00		450 00	
Utilities Expense	125 00		100 00	
Telephone Expense	75 00		125 00	
Total Operating Expenses	1250 00		1475 00	
Net Income	$ 3450 00		3425 00	

3. Given the figures below for Smalley Wholesale Warehouse, prepare a comparative income statement using the percent rate of net sales for each year.

Smalley Wholesale Hardware
Comparative Income Statement
For the Years 19_1 and 19_2

	Year Ended December 31, 19_2		Year Ended December 31, 19_1	
	Amount	Percent Rate	Amount	Percent Rate
Revenue from Sales:				
Sales	$164650.00		$180510.00	
Less: Sales Returns & Allowances	2350.00		1430.00	
Net Sales	162300.00		179080.00	
Cost of Goods Sold:				
Merchandise Inventory (beginning)	98610.00		86750.00	
Add: Purchases	83540.00		75640.00	
Cost of Goods Available for Sale	182150.00		162390.00	
Less: Merchandise Inventory (end)	53600.00		98610.00	
Cost of Goods Sold	128550.00		63780.00	
Gross Profit on Sales	33750.00		115300.00	
Operating Expenses:				
Salaries Expense	12550.00		18520.00	
Rent Expense	8400.00		8200.00	
Utilities Expense	1250.00		1450.00	
Telephone Expense	600.00		900.00	
Total Operating Expenses	22800.00		29070.00	
Net Income	$10950.00		$86230.00	

4. Prepare a comparative income statement for Down & Sons Ltd. for the months of May and June 19_I, given the information below. Show the percent rate of net sales for each item on the income statement.

May 19-I. Sales, $19 000; sales returns and allowances, $250; merchandise inventory, May I, $14 750; purchases during the month, $4500; merchandise inventory, May 31, $15 000; salaries expense, $1200; rent expense, $850; utilities expense, $750; telephone expense, $150.

June 19-I. Sales, $17 000; sales returns and allowances, $1,100; merchandise inventory, June I, $15 000; purchases during the month, $6000; merchandise inventory, June 30, $12 000; salaries expense, $1350; rent expense, $850; utilities expense, $800; telephone expense, $180.

Down & Sons Ltd.
Comparative Income Statement
For the Months of May and June, 19_I

	Month Ended June 30, 19_I		Month Ended May 31, 19_I	
	Amount	Percent Rate	Amount	Percent Rate
Revenue from Sales:				
Sales				
Less: Sales Returns & Allowances				
Net Sales				
Cost of Goods Sold:				
Merchandise Inventory (beginning)				
Add: Purchases				
Cost of Goods Available for Sale				
Less: Merchandise Inventory (end)				
Cost of Goods Sold				
Gross Profit on Sales				
Operating Expenses:				
Salaries Expense				
Rent Expense				
Utilities Expense				
Telephone Expense				
Total Operating Expenses				
Net Income				

B.3 1. Prepare a comparative income statement for Newman Enterprises for the months of July and August 19_1. Show increases or decreases in each item for the two periods and the percent rate of increase or decrease.

Newman Enterprises
Comparative Income Statement
For the Months Ended July 31 and August 31, 19-1

	Month Ended August 31	Month Ended July 31	Amount of Increase (Decrease)	Percent Rate Increase (Decrease)
Revenue from Sales:				
Sales	$12000.00	$10000.00		
Less: Sales Returns & Allowances	400.00	500.00		
Net Sales	11600.00	9500.00		
Cost of Goods Sold:				
Merchandise Inventory (beginning)	3000.00	3500.00		
Add: Purchases	4000.00	4000.00		
Cost of Goods Available for Sale	7000.00	7500.00		
Less: Merchandise Inventory (end)	3500.00	3000.00		
Cost of Goods Sold	3500.00	4500.00		
Gross Profit on Sales	8100.00	5000.00		
Operating Expenses				
Salaries Expense	1000.00	800.00		
Rent Expense	900.00	800.00		
Utilities Expense	100.00	75.00		
Telephone Expense	60.00	45.00		
Total Operating Expenses	2060.00	1720.00		
Net Income	$6040.00	$3280.00		

2. Prepare a comparative income statement for B & B Inc. for the months of October and November 19-2. Show increases or decreases in each item for the two periods and the percent rate of increase or decrease.

B & B Inc.
Comparative Income Statement
For the Months Ended October 31 and November 30, 19-2

	Month Ended Nov. 30	Month Ended Oct. 31	Amount of Increase (Decrease)	Percent Rate Increase (Decrease)
Revenue from Sales:				
Sales	$16320 00	$17810 00		
Less: Sales Returns & Allowances	160 00	120 00		
Net Sales	$16160 00	17690 00		
Cost of Goods Sold:				
Merchandise Inventory (beginning)	8360 00	4750 00		
Add: Purchases	5450 00	9300 00		
Cost of Goods Available for Sale	13810 00	14050 00		
Less: Merchandise Inventory (end)	6530 00	8360 00		
Cost of Goods Sold	7280 00	8690 00		
Gross Profit on Sales	8880 00	9000 00		
Operating Expenses				
Salaries Expense	1200 00	900 00		
Rent Expense	600 00	700 00		
Utilities Expense	225 00	200 00		
Telephone Expense	50 00	40 00		
Total Operating Expenses	2075 00	1840 00		
Net Income	$6805 00	$7160 00		

3. Prepare a comparative income statement for Hlynsky & Company Ltd. for the months of November and December 19-1 given the information below. Show increases or decreases in each item for the two periods and the percent rate of increase or decrease.

November 19-1. Sales, $29 000; sales returns and allowances, $450; merchandise inventory, November 1, $24 750; purchases during the month, $14 500; merchandise inventory, November 30, $25 000; salaries expense, $2200; rent expense, $1250; utilities expense, $800; telephone expense, $125.

December 19-1. Sales, $27 000; sales returns and allowances, $625; merchandise inventory, December 1, $25 000; purchases during the month, $16 000; merchandise inventory, December 31, $17 000; salaries expense, $1800; rent expense, $1250; utilities expense, $700; telephone expense, $130.

Hlynsky and Company
Comparative Income Statement
For the months Ended November 30 and December 31, 19-1

			Amount of Increase (Decrease)	Percent Rate Increase (Decrease)
Revenue from Sales:				
Sales				
Less: Sales Returns & Allowances				
Net Sales				
Cost of Goods Sold:				
Merchandise Inventory (beginning)				
Add: Purchases				
Cost of Goods Available for Sale				
Less: Merchandise Inventory (end)				
Cost of Goods Sold				
Gross Profit on Sales				
Operating Expenses				
Salaries Expense				
Rent Expense				
Utilities Expense				
Telephone Expense				
Total Operating Expenses				
Net Income				

Review

A

1. Victor Vicious had sales of $18 725 during the month of September. Sales returns and allowances amounted to $690. Calculate the amount of Victor's net sales.

2. Sammy Slick's Drag Shop sold fifteen rebuilt motors at a cost of $820 each. One motor was returned because of a defective valve. What was the amount of Sammy's net sales on the motors?

3. Find the cost of goods sold for each of the following cases:

	Beginning Inventory	Purchases	Ending Inventory	Cost Of Goods Sold
a)	$ 10 560	$ 8 390	$ 7 830	
b)	$ 26 463	$10 923	$ 9 761	
c)	$124 545	$22 324	$98 651	

4. The records of the J. R. Boot Company show the following information for the previous year: stock of goods on hand January 1, $35 845; stock of merchandise on hand December 31, $23 989; cost of additional merchandise purchased during the period, $12 848. Calculate the cost of goods sold for the company.

5. Find the gross profit (or loss) for each of the following cases:

	Net Sales	Cost Of Goods Sold	Gross Profit (or Loss)
a)	$ 7 913	$ 5 612	
b)	$ 8 338	$ 8 583	
c)	$16 519	$12 736	

6. The records of the Neighbourhood Department Store show the following information for the previous year: sales, $66 734; sales returns and allowances, $451; stock of merchandise on hand January !, $51 125; cost of additional merchandise purchased during the year, $46 131; stock of merchandise on hand December 31, $49 714. Calculate the gross profit (or loss) for the previous year.

7. Find the gross profit (or loss) and net income (or loss) for each of the following:

	Sales	Beginning Inventory	Purchases	Ending Inventory	Operating Expenses	Gross Profit (or Loss)	Net Income (or Loss)
a)	$39 818	$56 513	$20 616	$44 812	$6510		
b)	$43 602	$75 963	$45 635	$76 879	$7139		
c)	$ 8 162	$11 542	$ 3 812	$ 9 190	$2250		

8. The Easy-Read Book Exchange had the following information for the month of July: sales, $18 512; sales returns and allowances, $168; cost of goods sold, $13 163; rent expense, $750; salaries expense, $1705; utilities expense, $91; and insurance expense, $36. Calculate the gross profit (or loss) and net income (or loss) for the month.

9. Given the Income Statement that follows this question, calculate the net income (or loss) for the business.

Canuck Footwear had the following information for the previous year: sales, $95 950; sales returns and allowances, $385; inventory of goods on hand January 1, $32 650; cost of additional merchandise purchased during the year, $52 125; stock of merchandise on hand December 31, $38 947; salaries expense, $18 162; rent expense, $6130; utilities expense, $1313; and insurance expense, $720.

INCOME STATEMENT

Revenue from Sales:		
Sales	$	
Less: Sales Returns and Allowances	______	
Net Sales		$
Cost of Goods Sold:		
Merchandise Inventory (beginning)	$	
Purchases for the period	$______	
Cost of Goods Available for Sale	$	
Less: Merchandise Inventory (ending)	$______	
Cost of Goods Sold		$______
Gross Profit on Sales		$
Operating Expenses:		
Salaries Expense	$	
Rent Expense	$	
Utilities Expense	$	
Insurance Expense	$______	
Total Operating Expense		$______
Net Income (or Loss)		$______

B 1. Given the income statement below, calculate the percent rate of the accounts on the income statement based on net sales.

ACE DISTRIBUTORS

INCOME STATEMENT

For the Year Ended December 31, 19__

			Percent Rate
Revenue from Sales:			
Sales	$145 650		
Less: Sales Returns and Allowances	750		
Net Sales		$144 900	
Cost of Goods Sold:			
Merchandise Inventory (beginning)	$ 98 750		
Purchases for the period	$ 52 250		
Cost of Goods Available for Sale	$151 000		
Less: Merchandise Inventory (ending)	$ 76 550		
Cost of Goods Sold		$ 74 450	
Gross Profit on Sales		$ 70 450	
Operating Expenses:			
Salaries Expense	$ 21 530		
Rent Expense	$ 22 160		
Utilities Expense	$ 1 650		
Insurance Expense	$ 850		
Total Operating Expense		$ 46 190	
Net Income (or Loss)		$ 24 260	

2. Given the figures below for Broadway Joe's Sporting Goods, prepare a comparative income statement using the percent rate of net sales for each month.

Broadway Joe's Sporting Goods
Comparative Income Statement
For the Months of March and April, 19--

	Month Ended April, 19--		Month Ended March, 19--	
	Amount	Percent Rate	Amount	Percent Rate
Revenue from Sales:				
Sales	$ 10500 00		8900 00	
Less: Sales Returns & Allowances	500 00		300 00	
Net Sales	10000 00		8600 00	
Cost of Goods Sold:				
Merchandise Inventory (beginning)	5600 00		4500 00	
Add: Purchases	2300 00		3000 00	
Cost of Goods Available for Sale	7900 00		7500 00	
Less: Merchandise Inventory (end)	4300 00		5600 00	
Cost of Goods Sold	3600 00		1900 00	
Gross Profit on Sales	6400 00		6700 00	
Operating Expenses:				
Salaries Expense	750 00		800 00	
Rent Expense	600 00		600 00	
Utilities Expense	150 00		125 00	
Telephone Expense	75 00		100 00	
Total Operating Expenses	1575 00		1625 00	
Net Income	$ 4825 00		5075 00	

3. Prepare a comparative income statement for Wilson Warehouse Ltd. for the months of May and June 19-3. Show increases or decreases in each item for the two periods and the present rate of increase or decrease.

Wilson Warehouse Ltd.
Comparative Income Statement
For the Months Ending May 31 and June 30, 19-3

	Month Ended June 30	Month Ended May 31	Amount of Increase (Decrease)	Percent Rate Increase (Decrease)
Revenue from Sales:				
Sales	$ 8260 00	$ 7650 00		
Less: Sales Returns & Allowances	100 00	150 00		
Net Sales	8160 00	7500 00		
Cost of Goods Sold:				
Merchandise Inventory (beginning)	7700 00	8100 00		
Add: Purchases	4500 00	4200 00		
Cost of Goods Available for Sale	12200 00	12300 00		
Less: Merchandise Inventory (end)	7300 00	7700 00		
Cost of Goods Sold	4900 00	4600 00		
Gross Profit on Sales	3260 00	2900 00		
Operating Expenses				
Salaries Expense	1000 00	1200 00		
Rent Expense	200 00	150 00		
Utilities Expense	120 00	140 00		
Telephone Expense	105 00	125 00		
Total Operating Expenses	1425 00	1615 00		
Net Income	$ 1835 00	$ 1285 00		

Overall Review

1. Terrible Teddy's Department Store had sales totaling $67 836 during the year. If sales returns and allowances totaled $797, what was the amount of the store's net sales?

2. George Graceful owned a sporting goods store. During the month of May he sold $5462 worth of merchandise. The following items were returned during the month: one tennis racquet for $22.95; two pairs of track shoes at $28.50 each; and a pair of figure skates at $126.00. Calculate the amount of George's net sales for the month.

3. Find the cost of goods sold for each of the following cases:

	Beginning Inventory	Purchases	Ending Inventory	Cost Of Goods Sold
a)	$ 9 502	$ 5 434	$ 7 635	
b)	$ 77 642	$16 985	$19 542	
c)	$110 525	$20 363	$35 616	

4. The records of Janice's Fashion Shop show the following information for the previous year: stock of goods on hand January 1, $35 612; stock of merchandise on hand December 31, $23 595; cost of additional merchandise purchased during the period, $15 817. Calculate the cost of goods sold for the shop.

5. Find the gross profit (loss) for each of the following cases:

	Net Sales	Cost Of Goods Sold	Gross Profit (Loss)
a)	$ 9 511	$ 4 836	
b)	$120 563	$92 646	
c)	$ 73 645	$74 591	

6. The store records of Lana's Kozy Kitchen show the following information for the month of September: sales, $23 763; sales returns and allowances, $746; inventory September 1, $15 439; cost of additional merchandise purchased during the month, $6534; stock of merchandise on hand September 30, $13 879. Calculate the gross profit (loss) for the month of September.

7. Find the gross profit (or loss) and net income (or loss) for each of the following:

	Sales	Beginning Inventory	Purchases	Ending Inventory	Operating Expenses	Gross Profit (or Loss)	Net Income (or Loss)
a)	$ 14 350	$ 4 355	$ 6 146	$ 3 810	$ 3 160		
b)	$107 836	$88 972	$88 972	$46 302	$21 363		
c)	$ 85 209	$41 512	$39 164	$22 316	$27 139		

8. The Big J Department Store had the following information for the month of May: sales, $76 513; sales returns and allowances, $1303; cost of goods sold, $39 718; rent expense, $936; salaries expense, $1848; electricity expense, $312; and insurance expense, $72. Calculate the gross profit (loss) and net income (loss) for the month.

9. Given the Income Statement that follows this question, calculate the net income or loss for the business.

Mr. Magic's Novelty Shop had the following information for the previous year: sales, $29 500; sales returns and allowances, $304; merchandise inventory January 1, $10 506; merchandise inventory December 31, $11 020; cost of additional merchandise purchased during the year, $16 250; salaries, $6350; rent expense, $7380; utilities expense, $930; and insurance expense, $590.

INCOME STATEMENT

Revenue from Sales:		
Sales	$	
Less: Sales Returns and Allowances	________	
Net Sales		$
Cost of Goods Sold:		
Merchandise Inventory (beginning)	$	
Purchases for the period	$________	
Cost of Goods Available for Sale	$	
Less: Merchandise Inventory (ending)	$________	
Cost of Goods Sold		$________
Gross Profit on Sales		$
Operating Expenses:		
Salaries Expense	$	
Rent Expense	$	
Utilities Expense	$	
Insurance Expense	$________	
Total Operating Expense		$________
Net Income (or Loss)		$________

10. Given the income statement below, calculate the percent rate of the accounts on the income statement based on net sales.

JIM'S RETAIL SPORTING GOODS

INCOME STATEMENT

For the Month Ended May 31, 19--

			Percent Rate
Revenue from Sales:			
Sales	$15 650		
Less: Sales Returns and Allowances	150		
Net Sales		$15 500	
Cost of Goods Sold:			
Merchandise Inventory (beginning)	$ 7 600		
Purchases for the period	$ 2 700		
Cost of Goods Available for Sale	$10 350		
Less: Merchandise Inventory (ending)	$ 5 500		
Cost of Goods Sold		$ 4 850	
Gross Profit on Sales		$10 650	
Operating Expenses:			
Salaries Expense	$ 1 510		
Rent Expense	$ 1 230		
Utilities Expense	$ 190		
Insurance Expense	$ 150		
Total Operating Expense		$ 3 080	
Net Income (or Loss)		$ 7 570	

11. Given the figures below for Hudson Brothers Wholesale, prepare a comparative income statement using the percent rate of net sales for each month.

Hudson Brothers Wholesale
Comparative Income Statement
For the Months of April and May, 19-1

	Month Ended May, 19-1		Month Ended April, 19-1	
	Amount	Percent Rate	Amount	Percent Rate
Revenue from Sales:				
Sales	$ 64750 00		$ 58320 00	
Less: Sales Returns & Allowances	2250 00		1240 00	
Net Sales	62500 00		57080 00	
Cost of Goods Sold:				
Merchandise Inventory (beginning)	53640 00		48725 00	
Add: Purchases	25480 00		21630 00	
Cost of Goods Available for Sale	79120 00		70355 00	
Less: Merchandise Inventory (end)	46390 00		53640 00	
Cost of Goods Sold	32730 00		16715 00	
Gross Profit on Sales	29770 00		40365 00	
Operating Expenses:				
Salaries Expense	3860 00		4400 00	
Rent Expense	1500 00		1450 00	
Utilities Expense	250 00		275 00	
Telephone Expense	125 00		150 00	
Total Operating Expenses	5735 00		6275 00	
Net Income	$ 24035 00		$ 34090 00	

12. Prepare a comparative income statement for Jimmy's Sporting Goods for the months of January and February 19-2. Show increases or decreases in each item for the two periods and the percent rate of increase or decrease.

Jimmy's Sporting Goods
Comparative Income Statement
For the Months Ended January 31 and February 28, 19-2

	Month Ended Feb. 28	Month Ended Jan. 31	Amount of Increase (Decrease)	Percent Rate Increase (Decrease)
Revenue from Sales:				
Sales	$ 28000 00	$ 28900 00		
Less: Sales Returns & Allowances	400 00	600 00		
Net Sales	27600 00	28300 00		
Cost of Goods Sold:				
Merchandise Inventory (beginning)	25800 00	24400 00		
Add: Purchases	22400 00	19800 00		
Cost of Goods Available for Sale	48200 00	44200 00		
Less: Merchandise Inventory (end)	28400 00	25800 00		
Cost of Goods Sold	19800 00	18400 00		
Gross Profit on Sales	7800 00	9900 00		
Operating Expenses				
Salaries Expense	1200 00	900 00		
Rent Expense	1100 00	1000 00		
Utilities Expense	410 00	525 00		
Telephone Expense	100 00	90 00		
Total Operating Expenses	2810 00	2515 00		
Net Income	$ 4990 00	$ 7385 00		

R

Answer Key

A.2
1. $12 680
2. $14 550
3. $37 150
4. $4950
5. $20 047.50
6. $11 818.55

A.3
1. $31 540
2. a) $6950
   b) $28 672
   c) $2321
   d) $8246
   e) $19 573
3. $35 296
4. $101 591

A.4
1. a) $3190
   b) $-460
   c) $2406
   d) $-370
   e) $2364
2. $175
3. $-3.50
4. $144.50
5. $1080
6. $15 706
7. $-2450

A.5
1. a) $1490
   b) $639 (loss)
   c) $13 681
   d) $5339 (loss)
2. a) $2200; $100 (loss)
   b) $4198; $1638
   c) $22 692; $14 801
   d) $4776; $1544 (loss)
   e) $35 770; $23 386
3. $693.75; $677.40
4. $3514; $761 (loss)
5. a) $13 065; $6129
   b) $21 578; $11 038
   c) $30 802; $4265
   d) $22 639 (loss): $30 574 (loss)
   e) $5664; $3472
6. a) $56 343; $8996
   b) $42 676; $18 040
   c) $38 737; $28 361
   d) $249 738; $55 772
   e) $37 189; $16 057
7. $27 921

Project

1. a)
```
$9000
  350
        $8650

$6250
 2225
$8475
 4365
        $4110
        $4540

$1230
  725
  225
   35
        $2215
        $2325
```

b)
```
$18 560
    510
         $18 050

$14 835
  8 625
$23 460
  6 530
         $16 930
         $ 1 120

$ 1 540
  1 100
    376
     50
         $ 3 066
         $ 1 946
```

B.1 1.

RALPH'S SPORTING GOODS

INCOME STATEMENT

For the Month Ending June 30, 19__

			Percent Rate
Revenue from Sales:			
Sales	$10 500		
Less: Sales Returns and Allowances	600		
Net Sales		$9 600	100%
Cost of Goods Sold:			
Merchandise Inventory (beginning)	$ 6 000		62.5
Purchases for the period	$ 2 500		26.0
Cost of Goods Available for Sale	$ 8 500		88.5
Less: Merchandise Inventory (ending)	$ 4 000		41.7
Cost of Goods Sold		$4 500	46.9
Gross Profit on Sales		$5 100	53.1
Operating Expenses:			
Salaries Expense	$ 1 000		10.4
Rent Expense	$ 1 200		12.5
Utilities Expense	$ 150		1.6
Insurance Expense	$ 100		1.0
Total Operating Expense		$2 450	25.5
Net Income (or Loss)		$2 650	27.6

2.

ART'S WHOLESALE

INCOME STATEMENT

For the Six Months Ending June 30, 19__

			Percent Rate
Revenue from Sales:			
Sales	$78 800		
Less: Sales Returns and Allowances	200		
Net Sales		$78 600	100 %
Cost of Goods Sold:			
Merchandise Inventory (beginning)	$35 500		45.2
Purchases for the period	$15 600		19.8
Cost of Goods Available for Sale	$51 100		65.0
Less: Merchandise Inventory (ending)	$18 920		24.1
Cost of Goods Sold		$32 180	40.9
Gross Profit on Sales		$46 420	59.1
Operating Expenses:			
Salaries Expense	$ 7 300		9.3
Rent Expense	$ 8 450		10.8
Utilities Expense	$ 810		1.0
Insurance Expense	$ 400		0.5
Total Operating Expense		$16 960	21.6
Net Income (or Loss)		$29 460	37.5

3.

BOB'S DISTRIBUTORS INC.

INCOME STATEMENT

For the Year Ended December 31, 19__

			Percent Rate
Revenue from Sales:			
Sales	$153 650		
Less: Sales Returns and Allowances	590		
Net Sales		$153 060	100%
Cost of Goods Sold:			
Merchandise Inventory (beginning)	$100 510		65.7
Purchases for the period	$ 82 460		53.9
Cost of Goods Available for Sale	$182 970		119.5
Less: Merchandise Inventory (ending)	$ 52 820		34.
Cost of Goods Sold		$130 150	85.0
Gross Profit on Sales		$ 22 910	15.0
Operating Expenses:			
Salaries Expense	$ 22 310		14.6
Rent Expense	$ 12 650		8.3
Utilities Expense	$ 1 500		1.0
Insurance Expense	$ 1 200		0.8
Total Operating Expense		$ 37 660	24.6
Net Income (or Loss)		($ 14 750)	(9.6)

4.

TINY TOT'S DEPARTMENT STORE

INCOME STATEMENT

For the Month Ended September 20, 19__

			Percent Rate
Revenue from Sales:			
Sales	$20 620		
Less: Sales Returns and Allowances	450		
Net Sales		$20 170	100 %
Cost of Goods Sold:			
Merchandise inventory (beginning)	$14 680		72.8
Purchases for the period	$ 7 595		37.7
Cost of Goods Available for Sale	$22 275		110.4
Less: Merchandise Inventory (ending)	$ 6 945		34.4
Cost of Goods Sold		$15 330	76.0
Gross Profit on Sales		$ 4 840	24.0
Operating Expenses:			
Salaries Expense	$ 1 250		6.2
Rent Expense	$ 840		4.2
Utilities Expense	$ 196		1.0
Insurance Expense	$ 60		0.3
Total Operating Expense		$ 2 346	11.6
Net Income (or Loss)		$ 2 494	12.4

B.2 1.

Wilcox Industries Ltd.
Comparative Income Statement
For the Months of May and June 19__

	Month Ended June 30, 19__		Month Ended May 30, 19__	
	Amount	Percent Rate	Amount	Percent Rate
Revenue from Sales:				
Sales	$ 18000 00		$ 16000 00	
Less: Sales Returns & Allowances	600 00		400 00	
Net Sales	17400 00	100%	15600 00	100%
Cost of Goods Sold:				
Merchandise Inventory (beginning)	15000 00	82.2	13000 00	83.3
Add: Purchases	3000 00	17.2	6000 00	38.5
Cost of Goods Available for Sale	18000 00	103.4	19000 00	121.8
Less: Merchandise Inventory (end)	14000 00	80.5	15000 00	96.2
Cost of Goods Sold	4000 00	23.0	4000 00	25.6
Gross Profit on Sales	13400 00	77.0	11000 00	70.5
Operating Expenses:				
Salaries Expense	1000 00	5.7	1200 00	7.7
Rent Expense	900 00	5.2	900 00	5.8
Utilities Expense	800 00	4.6	740 00	4.7
Telephone Expense	125 00	0.7	100 00	0.6
Total Operating Expenses	2825 00	16.2	2940 00	18.8
Net Income	$ 10575 00	60.8	$ 8060 00	51.7

2.

Ennis and Sons Ltd.
Comparative Income Statement
For the Months of August, September 19__

	Month Ended September 30, 19__		Month Ended August 31, 19__	
	Amount	Percent Rate	Amount	Percent Rate
Revenue from Sales:				
Sales	$ 8200.00		$ 10000.00	
Less: Sales Returns & Allowances	100.00		400.00	
Net Sales	8100.00	100%	9600.00	100%
Cost of Goods Sold:				
Merchandise Inventory (beginning)	5200.00	64.2	3700.00	38.5
Add: Purchases	1700.00	21.0	6200.00	64.6
Cost of Goods Available for Sale	6900.00	85.2	9900.00	103.1
Less: Merchandise Inventory (end)	3500.00	43.2	5200.00	54.2
Cost of Goods Sold	3400.00	42.0	4700.00	49.0
Gross Profit on Sales	4700.00	58.0	4900.00	51.0
Operating Expenses:				
Salaries Expense	600.00	7.4	800.00	8.3
Rent Expense	450.00	5.6	450.00	4.7
Utilities Expense	125.00	1.5	100.00	1.0
Telephone Expense	75.00	0.9	125.00	1.3
Total Operating Expenses	1250.00	15.4	1475.00	15.4
Net Income	$ 3450.00	42.6	3425.00	35.7

3.

Smalley Wholesale Hardware
Comparative Income Statement
For the Years 19_1 and 19_2

	Year Ended December 31, 19_2		Year Ended December 31, 19_1	
	Amount	Percent Rate	Amount	Percent Rate
Revenue from Sales:				
Sales	$164650 00		$180510 00	
Less: Sales Returns & Allowances	2350 00		1430 00	
Net Sales	162300 00	100 %	179080 00	100 %
Cost of Goods Sold:				
Merchandise Inventory (beginning)	98610 00	60.8	86750 00	48.4
Add: Purchases	83540 00	51.5	75640 00	42.2
Cost of Goods Available for Sale	182150 00	112.2	162390 00	90.7
Less: Merchandise Inventory (end)	53600 00	33.0	98610 00	55.1
Cost of Goods Sold	128550 00	79.2	63780 00	35.6
Gross Profit on Sales	33750 00	20.8	115300 00	64.4
Operating Expenses:				
Salaries Expense	12550 00	7.7	18520 00	10.3
Rent Expense	8400 00	5.2	8200 00	4.6
Utilities Expense	1250 00	0.8	1450 00	0.8
Telephone Expense	600 00	0.4	900 00	0.5
Total Operating Expenses	22800 00	14.0	29070 00	16.2
Net Income	$10950 00	6.7	$86230 00	48.2

4.

Down & Sons Ltd.
Comparative Income Statement
For the Months of May and June, 19_1

	Month Ended June 30, 19_1		Month Ended May 31, 19_1	
	Amount	Percent Rate	Amount	Percent Rate
Revenue from Sales:				
Sales	17000 00		19000 00	
Less: Sales Returns & Allowances	1100 00		250 00	
Net Sales	15900 00	100%	18750 00	100%
Cost of Goods Sold:				
Merchandise Inventory (beginning)	15000 00	94.3	14750 00	78.7
Add: Purchases	6000 00	37.7	4500 00	24.0
Cost of Goods Available for Sale	21000 00	132.1	19250 00	102.7
Less: Merchandise Inventory (end)	12000 00	75.5	15000 00	80.0
Cost of Goods Sold	3000 00	18.9	4250 00	22.7
Gross Profit on Sales	12900 00	81.1	14500 00	77.3
Operating Expenses:				
Salaries Expense	1350 00	8.5	1200 00	6.4
Rent Expense	850 00	5.3	850 00	4.5
Utilities Expense	800 00	5.0	750 00	4.0
Telephone Expense	180 00	1.1	150 00	0.8
Total Operating Expenses	3180 00	20.1	2950 00	15.7
Net Income	9720 00	61.1	11550 00	61.6

1.

Newman Enterprises
Comparative Income Statement
For the Months Ended July 31 and August 31, 19-1

	Month Ended August 31	Month Ended July 31	Amount of Increase (Decrease)	Percent Rate Increase (Decrease)
Revenue from Sales:				
Sales	$12000 00	$10000 00	2000 00	20%
Less: Sales Returns & Allowances	400 00	500 00	(100 00)	(20)
Net Sales	11600 00	9500 00	2100 00	22.1
Cost of Goods Sold:				
Merchandise Inventory (beginning)	3000 00	3500 00	(500 00)	(14.3)
Add: Purchases	4000 00	4000 00	0 00	0
Cost of Goods Available for Sale	7000 00	7500 00	(500 00)	(6.7)
Less: Merchandise Inventory (end)	3500 00	3000 00	500 00	16.7
Cost of Goods Sold	3500 00	4500 00	(1000 00)	(22.2)
Gross Profit on Sales	8100 00	5000 00	3100 00	62
Operating Expenses				
Salaries Expense	1000 00	800 00	200 00	25
Rent Expense	900 00	800 00	100 00	12.5
Utilities Expense	100 00	75 00	25 00	33.3
Telephone Expense	60 00	45 00	15 00	33.3
Total Operating Expenses	2060 00	1720 00	340 00	19.8
Net Income	$6040 00	$3280 00	2760 00	84.1

2.

B & B Inc.
Comparative Income Statement
For the Months Ended October 31 and November 30, 19-2

	Month Ended Nov. 30	Month Ended Oct. 31	Amount of Increase (Decrease)	Percent Rate Increase (Dacrease)
Revenue from Sales:				
Sales	$16320 00	$17810 00	(1490 00)	(8.4%)
Less: Sales Returns & Allowances	160 00	120 00	40 00	33.3
Net Sales	$16160 00	17690 00	(1530 00)	(8.6)
Cost of Goods Sold:				
Merchandise Inventory (beginning)	8360 00	6750 00	(1610 00)	(23.9)
Add: Purchases	5450 00	9300 00	(3850 00)	(41.4)
Cost of Goods Available for Sale	13810 00	16050 00	(2240 00)	(14.0)
Less: Merchandise Inventory (end)	6530 00	8360 00	(1830 00)	(21.9)
Cost of Goods Sold	7280 00	8690 00	(1410 00)	(16.2)
Gross Profit on Sales	8880 00	9000 00	120 00	(1.3)
Operating Expenses				
Salaries Expense	1200 00	900 00	300 00	33.3
Rent Expense	600 00	700 00	(100 00)	(14.3)
Utilities Expense	225 00	200 00	25 00	12.5
Telephone Expense	50 00	40 00	10 00	25
Total Operating Expenses	2075 00	1840 00	235 00	12.8
Net Income	$6805 00	$7160 00	(355 00)	(5.0)

3.

Hlynsky and Company
Comparative Income Statement
For the months Ended November 30 and December 31, 19-1

	MONTH ENDED Dec. 31	MONTH ENDED Nov. 30	Amount of Increase (Decrease)	Percent Rate Increase (Decrease)
Revenue from Sales:				
Sales	27000 00	29000 00	(2000 00)	(6.9%)
Less: Sales Returns & Allowances	625 00	450 00	175 00	38.9
Net Sales	26375 00	28550 00	(2175 00)	(7.6)
Cost of Goods Sold:				
Merchandise Inventory (beginning)	25000 00	24750 00	250 00	1.0
Add: Purchases	16000 00	14500 00	1500 00	10.3
Cost of Goods Available for Sale	41000 00	39250 00	1750 00	4.5
Less: Merchandise Inventory (end)	17000 00	25000 00	(8000 00)	(32)
Cost of Goods Sold	24000 00	14250 00	9750 00	68.4
Gross Profit on Sales	2375 00	14300 00	(11925 00)	(83.4)
Operating Expenses				
Salaries Expense	1800 00	2200 00	400 00	18.2
Rent Expense	1250 00	1250 00	0 00	0
Utilities Expense	700 00	800 00	100 00	12.5
Telephone Expense	130 00	125 00	5 00	4.0
Total Operating Expenses	3880 00	4375 00	(495 00)	(11.3)
Net Income	(1505 00)	9925 00	(11430 00)	(115.2)

Review

A

1. $18 035
2. $11 480
3. a) $11 120
   b) $27 625
   c) $48 218
4. $24 704
5. a) $2301
   b) $245 (loss)
   c) $3783
6. $18 741
7. a) $7501; $991
   b) $1117 (loss): $8256 (loss)
   c) $1998; $252 (loss)
8. $5181; $2599
9. $95 950
   385
   $95 565

   $32 650
   52 125
   $84 775
   38 945
   $45 828
   $49 737

   $18 162
   6 130
   1 313
   720
   $26 325
   $23 412

B 1.

ACE DISTRIBUTORS

INCOME STATEMENT

For the Year Ended December 31, 19__

			Percent Rate
Revenue from Sales:			
Sales	$145 650		
Less: Sales Returns and Allowances	750		
Net Sales		$144 900	100 %
Cost of Goods Sold:			
Merchandise Inventory (beginning)	$ 98 750		68.2
Purchases for the period	$ 52 250		36.1
Cost of Goods Available for Sale	$151 000		104.2
Less: Merchandise Inventory (ending)	$ 76 550		52.8
Cost of Goods Sold		$ 74 450	51 [illegible]
Gross Profit on Sales		$ 70 450	48.6
Operating Expenses:			
Salaries Expense	$ 21 530		14.9
Rent Expense	$ 22 160		15.3
Utilities Expense	$ 1 650		1.1
Insurance Expense	$ 850		0.6
Total Operating Expense		$ 46 190	31.9
Net Income (or Loss)		$ 24 260	16.7

2.

Broadway Joe's Sporting Goods
Comparative Income Statement
For the Months of March and April, 19--

	Month Ended April, 19--		Month Ended March, 19--	
	Amount	Percent Rate	Amount	Percent Rate
Revenue from Sales:				
Sales	$ 10500 00		8900 00	
Less: Sales Returns & Allowances	500 00		300 00	
Net Sales	10000 00	100%	8600 00	100 %
Cost of Goods Sold:				
Merchandise Inventory (beginning)	5600 00	56	4500 00	52.3
Add: Purchases	2300 00	23	3000 00	34.9
Cost of Goods Available for Sale	7900 00	79	7500 00	87.2
Less: Merchandise Inventory (end)	4300 00	43	5600 00	65.1
Cost of Goods Sold	3600 00	36	1900 00	22.1
Gross Profit on Sales	6400 00	64	6700 00	77.9
Operating Expenses:				
Salaries Expense	750 00	7.5	800 00	9.3
Rent Expense	600 00	6	600 00	7.0
Utilities Expense	150 00	1.5	125 00	1.5
Telephone Expense	75 00	.8	100 00	1.2
Total Operating Expenses	1575 00	15.8	1625 00	18.9
Net Income	$ 4825 00	48.3	5075 00	59.0

3.

Wilson Warehouse Ltd.
Comparative Income Statement
For the Months Ending May 31 and June 30, 19-3

	Month Ended June 30	Month Ended May 31	Amount of Increase (Decrease)	Percent Rate Increase (Decrease)
Revenue from Sales:				
Sales	$ 8260 00	$ 7650 00	610 00	8.0
Less: Sales Returns & Allowances	100 00	150 00	(50 00)	(33.3)
Net Sales	8160 00	7500 00	660 00	8.8
Cost of Goods Sold:				
Merchandise Inventory (beginning)	7700 00	8100 00	(400 00)	(4.9)
Add: Purchases	4500 00	4200 00	300 00	7.1
Cost of Goods Available for Sale	12200 00	12300 00	(100 00)	(0.8)
Less: Merchandise Inventory (end)	7300 00	7700 00	(400 00)	(5.2)
Cost of Goods Sold	4900 00	4600 00	300 00	6.5
Gross Profit on Sales	3260 00	2900 00	360 00	12.4
Operating Expenses				
Salaries Expense	1000 00	1200 00	(200 00)	(16.7)
Rent Expense	200 00	150 00	50 00	33.3
Utilities Expense	120 00	140 00	20 00	14.3
Telephone Expense	105 00	125 00	20 00	16
Total Operating Expenses	1425 00	1615 00	(190 00)	(11.8)
Net Income	$ 1835 00	$ 1285 00	550 00	42.8

Overall Review

1. $67 039
2. $5256.05
3. a) $7301
   b) $75 089
   c) $95 272
4. $27 834
5. a) $4675
   b) $27 917
   c) $946 (loss)
6. $14 923
7. a) $7659; $4499
   b) $30 253; $8890
   c) $26 849; $290 (loss)
8. $35 492; $32 324

9. $29 500
   304
   $29 196

   $10 506
   16 250
   $26 756
   11 020
   $15 736
   $13 460

   $ 6 350
   7 380
   590
   $15 250
   $ 1 790

10.

JIM'S RETAIL SPORTING GOODS

INCOME STATEMENT

For the Month Ended May 31, 19--

			Percent Rate
Revenue from Sales:			
Sales	$15 650		
Less: Sales Returns and Allowances	150		
Net Sales		$15 500	100 %
Cost of Goods Sold:			
Merchandise Inventory (beginning)	$ 7 600		49.0
Purchases for the period	$ 2 700		17.7
Cost of Goods Available for Sale	$10 350		66.8
Less: Merchandise Inventory (ending)	$ 5 500		35.[illegible]
Cost of Goods Sold		$ 4 850	31.3
Gross Profit on Sales		$10 650	68.7
Operating Expenses:			
Salaries Expense	$ 1 510		9.7
Rent Expense	$ 1 230		7.9
Utilities Expense	$ 190		1.2
Insurance Expense	$ 150		1.0
Total Operating Expense		$ 3 080	19.9
Net Income (or Loss)		$ 7 570	48.8

11.

Hudson Brothers Wholesale
Comparative Income Statement
For the Months of April and May, 19-1

	Month Ended May, 19-1		Month Ended April, 19-1	
	Amount	Percent Rate	Amount	Percent Rate
Revenue from Sales:				
Sales	$ 64750 00		$ 58320 00	
Less: Sales Returns & Allowances	2250 00		1240 00	
Net Sales	62500 00	100%	57080 00	100%
Cost of Goods Sold:				
Merchandise Inventory (beginning)	53640 00	85.8	48725 00	85.4
Add: Purchases	25480 00	40.8	21630 00	37.9
Cost of Goods Available for Sale	79120 00	126.6	70355 00	123.3
Less: Merchandise Inventory (end)	46390 00	74.2	53640 00	94.0
Cost of Goods Sold	32730 00	52.4	16715 00	29.3
Gross Profit on Sales	29770 00	47.6	40365 00	70.7
Operating Expenses:				
Salaries Expense	3860 00	6.2	4400 00	7.7
Rent Expense	1500 00	2.4	1450 00	2.5
Utilities Expense	250 00	0.4	275 00	0.5
Telephone Expense	125 00	0.2	150 00	0.3
Total Operating Expenses	5735 00	9.2	6275 00	11.0
Net Income	$ 24035 00	38.5	$ 34090 00	59.7

12.

Jimmy's Sporting Goods
Comparative Income Statement
For the Months Ended January 31 and February 28, 19-2

	Month Ended Feb. 28	Month Ended Jan. 31	Amount of Increase (Decrease)	Percent Rate Increase (Decrease)
Revenue from Sales:				
Sales	$ 28000 00	$ 28900 00	(900 00)	(3.1%)
Less: Sales Returns & Allowances	400 00	600 00	(200 00)	(33.3)
Net Sales	27600 00	28300 00	(700 00)	(2.5)
Cost of Goods Sold:				
Merchandise Inventory (beginning)	25800 00	24400 00	4100 00	16.8
Add: Purchases	22400 00	19800 00	2600 00	13.1
Cost of Goods Available for Sale	48200 00	44200 00	4000 00	9.0
Less: Merchandise Inventory (end)	28400 00	25800 00	2600 00	10.1
Cost of Goods Sold	19800 00	18400 00	1400 00	7.6
Gross Profit on Sales	7800 00	9900 00	(2100 00)	(21.2)
Operating Expenses				
Salaries Expense	1200 00	900 00	300 00	33.3
Rent Expense	1100 00	1000 00	100 00	10.0
Utilities Expense	410 00	525 00	(115 00)	(21.9)
Telephone Expense	100 00	90 00	10 00	11.1
Total Operating Expenses	2810 00	2515 00	295 00	11.7
Net Income	$ 4990 00	$ 7385 00	(2395 00)	(32.4)

OP.IV. DIVISION OF BUSINESS PROFITS/LOSSES

A.1

1. Find the share of net income (loss) for each partner assuming they have agreed to share profits and losses equally.

Partners	Net Income (Loss)	Share For Each Partner
a) Paul, Renouf, Gyser	$15 912	
b) Thornton, Ploen	($5326)	
c) Grant, Sherman	$22 584	
d) Miller, Minnick, Matuzak, Mike	$124 640	
e) Collins, Mix, Jones	($19 200)	
f) Free, Smith, Roy	$83 100	

2. Manning and Burroughs formed a partnership. They agreed to share profits and losses equally. Find the share for each partner if the first year's operation resulted in a loss of $26 540.

3. Hogie, Rats and Woodstock formed a partnership agreeing to share profits and losses equally. During the first year of operation there was a net loss of $33 540. During the second year the company had a net income of $6270. Find the share of each partner for each of the two years of operation.

A.2

1. Find the share of net income (loss) for each partner assuming they have agreed to share profits (losses) in the given ratio:

	Partners	Net Income (Loss)	Agreed Ratio
a)	A, B	$15 274	4:3
b)	A, B, C	$24 030	3:2:1
c)	A, B	($36 027)	5:4
d)	A, B, C	$50 050	4:3:3
e)	A, B	($88 590)	3:2
f)	A, B, C, D	$124 800	4:3:3:2
g)	A, B, C, D	$180 640	4:2:2:2
h)	A, B, C	$152 690	5:3:2

2. Three people, George, Kennedy and Synder, formed a partnership investing $100 000, $98 000 and $50 000, respectively. They agreed to share profits and losses in the following ratio: 3:3:2. Calculate each partner's share of a net income of $240 000.

3. Three people, Barry, Russell and Chamberlain formed a partnership investing $56 000, $48 000 and $40 000, respectively. They agreed to share profits and losses according to the ratio 4:3:2. Calculate each partner's share of a net loss of $27 180.

A.3

1. Find the share of net income (loss) for each partner assuming they have agreed to share profits (losses) in the indicated percentage rates:

	Partners	Net Income (Loss)	Agreed Percentage Rate
a)	A, B	$20 000	70%, 30%
b)	A, B	($18 330)	60%, 40%
c)	A, B	$26 432	50%, 50%
d)	A, B, C	($19 400)	40%, 30%, 30%
e)	A, B, C	$124 500	50%, 30%, 20%
f)	A, B, C	$210 800	60%, 30%, 10%
g)	A, B, C, D	($42 160)	40%, 30%, 20%, 10%
h)	A, B, C, D	$186 740	30%, 30%, 20%, 20%

2. Three people, Bird, Macwell and Archibald, formed a partnership investing $62 000, $61 000 and $20 000,respectively. They agreed to share profits (losses) on the basis of 40%, 40%, 20%. During the first year sales were $150 300 and expenses $130 500. Calculate each partner's share of the net income (loss).

3. Three people, Williamson, Thurmond and Johnson, formed a partnership investing $35 000, $29 000 and $29 000, respectively. They agreed to share profits (losses) on the basis of 40%, 30%, 30%. During the first year sales were $85 690, and expenses totaled $95 990. Calculate each partner's share of the net income (loss).

A.4

1. The net income (loss) to each of the following partnerships is to be divided according to each partner's investment. Calculate each partner's share.

	Investment of Each Partner	Net Income (Loss)
a)	$20 000, $10 000	($5337)
b)	$60 000, $40 000	$22 580
c)	$10 000, $15 000, $25 000	$35 735
d)	$20 000, $30 000, $50 000	($16 900)
e)	$90 000, $45 000, $45 000	$125 650
f)	$30 000, $50 000, $50 000	$260 000
g)	$50 000, $40 000, $30 000, $30 000	$150 000
h)	$60 000, $60 000, $50 000, $30 000	$275 000

2. Kent, Wells and Logan formed a partnership investing $50 000, $30 000 and $20 000, respectively. They agree to share profits and losses on the basis of their capital investments. During the first year they had sales of $250 650 and expenses of $120 550. Calculate each partner's share of the net income (loss).

3. Pop, Holmes and House formed a partnership investing $80 000, $70 000 and $50 000, respectively. They agree to share profits and losses on the basis of their capital investments. During the first year they had sales of $275 320 and expenses of $300 460. Calculate each partner's share of the net income (loss).

A.5

1. The partnership agreement for the following businesses states that each of the partners is to receive interest on the beginning capital investment prior to the equal division of the remaining net income (loss). Calculate the amount of each partner's total share of the net income (loss).

	Investment of Each Partner	Interest Rate	Net Income (Loss)
a)	Partner A $30 000; Partner B $40 000	10%	$20 000
b)	Partner A $50 000; Partner B $40 000	12%	($5000)
c)	Partner A $60 000; Partner B $50 000	10%	$9000
d)	Partner A $80 000; Partner B $70 000	14%	$29 830
e)	Partner A $100 000; Partner B $80 000	12%	$15 000
f)	Partner A $60 000; Partner B $40 000	9%	($4000)
g)	Partner A $50 000; Partner B $50 000 Partner C $40 000	10%	$80 000

A.6 1. The partnership agreement for the following businesses states that each of the partners is to receive a salary at year-end only. Any remaining net income (loss) is to be divided equally among the partners. Calculate the amount of each partner's total share of the net income (loss).

	Salary Paid to Each Partner	Net Income (Loss)
a)	Partner A $10 000; Partner B $8000	$21 000
b)	Partner A $12 000; Partner B $9000	$18 000
c)	Partner A $8000; Partner B $5000	($6000)
d)	Partner A $15 000; Partner B $12 000	$44 000
e)	Partner A $9000; Partner B $6000	$13 000
f)	Partner A $5000; Partner B $3000	($3000)
g)	Partner A $10 000; Partner B $8000; Partner C $7000	$52 000

A.7 1. The partnership agreement for the following businesses states that each of the partners is to receive a salary at year-end only. As well, each of the partners will receive interest on the beginning capital investments. Any remaining net income (loss) is to be divided equally among the partners. Calculate the amount of each partner's total share of the net income (loss).

a) Pierson and Bennett formed a partnership by investing $60 000 and $50 000, respectively. The partnership agreement states that Pierson should receive a salary of $10 000 per year and Bennett $12 000. In addition, each partner is to receive 10% interest on his beginning capital investment. Calculate each partner's total share of a net income of $39 000.

b) Holmes and Patterson formed a partnership by investing $80 000 and $70 000, respectively. The partnership agreement states that Holmes should receive a salary of $8000 per year and Patterson $7000. In addition, each partner is to receive 12% interest on her beginning capital investment. Calculate each partner's total share of a net income of $21 000.

c) Mann and Wilson formed a partnership by investing $20 000 and $18 000, respectively. The partnership agreement states that Mann should receive a salary of $5000 per year and Wilson $7000. In addition, each partner is to receive 8% interest on her beginning capital investment. Calculate each partner's total share of a net loss of $6000.

d) Stanley, Horton and Kelly formed a partnership by investing $80 000, $75 000 and $70 000, respectively. The partnership agreement states that Stanley is to receive a salary of $10 000 per year, Horton, $9000 and Kelly, $12 000. In addition, each partner is to receive 12% interest on his beginning capital investment. Calculate each partner's total share of a net income of $121 660.

B.1 1. Calculate the percent rate of dividend paid in each of the following:

	Capital Stock	Total Dividend
a)	$ 400 000	$40 000
b)	$ 600 000	$30 000
c)	$ 180 000	$ 9 000
d)	$ 2 500 000	$50 000
e)	$ 500 000	$30 000
f)	$ 2 000 000	$40 000
g)	$20 000 000	$100 000

2. McIntyre Industries had a capital stock of $1 000 000. At the end of the current financial year the directors of the company declared a dividend of $75 000. What percent rate of dividend was paid?

3. Wilcox and Sons Ltd. had a capital stock of $620 000. At the end of the previous financial year the net income distributed to the shareholders was $82 000. Calculate the percent rate of dividend that was paid.

4. Bam and Bam Ltd. had a capital stock of $3 000 000. The net income for the year was $90 000. What percent rate of dividend may be declared if the entire net income is to be distributed to the shareholders?

B.2 1. Calculate the dividend rate in dollars and cents per share for each of the following:

	Number of Shares	Total Dividend
a)	8 000	$ 20 000
b)	20 000	$ 29 000
c)	1 000 000	$1 300 000
d)	400 000	$ 80 000
e)	200 000	$ 150 000
f)	1 300 000	$ 390 000

2. Northern Mining Ltd. with a capital stock of $5 500 000 (55 000 shares at $10 par value per share) has a net income of $115 500 during the current year. What rate of dividend expressed in dollars and cents per share may be declared if the entire net income is to be paid to the shareholders?

3. Educational Services Ltd. with a capital stock of $2 000 000 (20 000 shares at $100 par value per share) has a net income of $37 000 during the current year. The directors declare the entire net income as a dividend. What was the rate of dividend in dollars and cents per share?

4. Inter-City Frieght Lines Ltd. has a capital stock of $3 000 000 (200 000 shares at $15 per share). During the year the firm had sales of $1 380 000 and expenses totaling $1 060 000. The directors of the firm declare the entire net income as a dividend. What was the rate of dividend in dollars and cents per share?

5. Wilson Manufacturing Ltd. has a capital stock of $20 000 000 (4 000 000 shares at $5 per share). During the year the business had sales of $22 565 000 and expenses totaling $13 965 000. The directors of the business declare the entire net income as a dividend. What was the rate of dividend in dollars and cents per share?

B.3

1. Calculate the total dividend payable to shareholders given the net income and the amount of retained earnings.

	Net Income	Retained Earnings
a)	$ 8 000	$ 8 000
b)	$ 12 650	$ 5 000
c)	$ 121 431	$ 66 000
d)	$ 88 560	$ 23 000
e)	$ 79 000	$ 60 000
f)	$1 000 000	$725 000
g)	$ 862 000	$500 000

2. The capital of Rand & Co. Ltd. consists of 35 000 shares of stock each with a par value of $20. Last year the operation had a net income of $75 632. The directors decided to retain $25 000 of this net income to help finance future business expansion. What amount was paid to shareholders in the form of a dividend?

3. Quinn and Co. Ltd. has a capital stock of $500 000 (25 000 shares at a par value of $20 each). During the past year the company had net sales of $115 600 and total expenses of $82 000. The directors decide to retain $20 000 in the firm. What amount of dividend was paid to the shareholders?

4. Timber-Mart Lumber Co. Ltd. has a capital stock of $5 000 000 (500 000 shares at $10 per share). During the past year net sales were $420 695. Total expenses were $335 713. At the annual directors' meeting, the directors decided to retain $50 000 in case of emergency. The remainder of the net income was to be distributed to the shareholders. Calculate the amount of total dividend paid to the shareholders.

B.4 1. Calculate the total dividend and the percent rate paid in each of the following:

	Capital Stock	Net Income	Retained Earnings
a)	$ 200 000	$ 60 000	$ 30 000
b)	$2 500 000	$ 500 000	$300 000
c)	$1 250 000	$ 225 000	$ 75 000
d)	$ 550 000	$ 80 000	$ 55 000
e)	$4 000 000	$1 000 000	$600 000
f)	$3 000 000	$ 800 000	$300 000
g)	$1 750 000	$ 500 000	$400 000

2. Crocker Industries Ltd. has a capital stock of $4 500 000 (300 000 shares at $15 per share). The net income for the past year was $462 000. The directors of the company decided to retain $162 000 in the firm to finance future business expansion. What percent rate of dividend was paid to the shareholders?

3. Ennis Ltd. has a capital stock of $850 000 (85 000 shares at $10 per share). During the year net sales amounted to $225 650. Total expenses amounted to $146 000. At the annual meeting the directors decide to retain $30 000 in the business. What percent rate of dividend was paid to the shareholders?

4. Stephenson Inc. has a capital stock of $530 000 (53 000 shares at $10 per share). During the year net sales amounted to $130 350. Total expenses were $92 500. At the annual meeting, the company's directors decide to retain $20 000 in the business to finance future expansion. What percent rate of dividend was paid to the shareholders?

B.5

1. Calculate the total dividend paid to the shareholders and the dividend rate in dollars and cents per share for each of the following:

	Number of Shares	Net Income	Retained Earnings
a)	1 000	$ 130 000	$ 30 000
b)	25 000	$ 62 500	$ 21 250
c)	50 000	$ 660 000	$ 300 000
d)	100 000	$ 790 000	$ 500 000
e)	200 000	$1 860 000	$ 750 000
f)	1 000 000	$4 380 000	$1 500 000

2. Western Industries Ltd. has a capital stock of $1 000 000 (10 000 shares at $100 each). The net income for the year was $72 500. The directors of the corporation decide to retain $50 000 in the business. Calculate the rate of dividend in dollars and cents per share.

3. Interlake Mining Inc. has a capital stock of $7 500 000 (750 000 shares at $10 each). The net income for the year was $3 000 000. To meet unexpected emergencies the directors of the company decide to retain $300 000 in the business. What was the rate of dividend in dollars and cents per share?

4. Smitty's Ltd. has a capital stock of $2 000 000 (100 000 shares at $20 per share). During the past year the firm had net sales of $930 000. All expenses of the operation totaled $550 000. At the annual meeting the directors decided to retain $100 000 in the company. Calculate the rate of dividend paid to the shareholders in dollars and cents per share.

5. Enns Ltd. has a capital stock of $1 500 000 (50 000 shares at $30 per share). During the past year the firm had net sales of $2 842 000. Total expenses of running the business were $2 424 500. The directors decided to retain $75 000 in the business to finance future expansion. Calculate the rate of dividend paid to the shareholders in dollars and cents per share.

C.1

1. Frankie Smith made purchases totaling $813.50 during the past year at the Sunshine Co-Operative. The directors of the co-operative declare a 2% patronage dividend. What amount of dividend would Frankie receive?

2. B. Norman made purchases totaling $1236.50 at the Seine River Co-Operative during the past year. The directors of the co-operative declare a 3% patronage dividend. What amount of dividend would Norman receive?

3. John Lloyd is a member of the Mid-West Farm Co-Operative. During the past year he made purchases totaling $535.20 at the grocery section of the co-operative and $620.30 at the fuel section. Calculate John's total dividend for the year if the directors declare a 1% patronage dividend on food purchases and 2% on fuel purchases.

4. A local consumers' co-operative gave its customers a receipt for the amount of each cash purchase. At the end of the year customers were to receive a patronage refund of 4-1/2% on all purchases made during the year. Margaret Court had the following receipts: #1 - $51.60; #2 - $101.30; #3 - $59.35; #4 - $145.65; #5 - $210.63. Calculate the total patronage refund Margaret should receive.

5. Larry Butter belongs to an agricultural co-operative. During the past year he purchased farm equipment totaling $8350; groceries totaling $864.50 and fuel totaling $3825. The directors of the co-operative declared the following patronage refunds: equipment 2%, food 2-1/2%, and fuel 3-1/2%. Calculate the total amount of Larry's patronage refund.

C.2

1. Allan owns ten shares of Minor Co-Operative purchased at $5.00 each. What amount of dividend would Allan receive if the directors declared an $0.80 dividend per share?

2. Grift owns 5 shares of Tiger Mountain Co-Operative with a par value of $10.00. What amount of dividend would Grift receive if the directors declared a 6% dividend per share?

3. Hanley purchased twenty-five shares of the local co-operative at $7.50 each. The directors of the co-operative declared a 5% dividend on all shares. What total amount of dividend would Hanley receive?

C.3

1. Calculate the dividend on capital stock, the patronage dividend, and the total dividend for each of the following:

	Number of Shares	Par Value	Percent Dividend	Amount of Purchases	Patronage Dividend
a)	3	$ 5.00	5%	$1230.16	3%
b)	10	$ 7.50	8%	$ 888.99	2%
c)	20	$10.00	6%	$ 764.46	4%
d)	5	$ 4.00	7%	$1306.64	1%
e)	25	$20.00	4%	$ 685.55	5%

2. P. Piper belongs to an agricultural co-operative in a rural town. Piper purchased 5 shares of capital stock at a par value of $10.00 each. During the year she made purchases of $856.65 at the grocery section and $1236.24 at the hardware-building section. At the end of the year the directors of the co-operative declared a 6% dividend on capital stock and a 4% dividend on merchandise purchased at the co-operative. What total dividend would Piper receive from the co-operative?

3. Doun is a member of the Big T Co-operative. He purchased five shares of stock each with a par value of $5. During the year he purchased $380.16 worth of merchandise from the co-operative. At the end of the year the directors declare a 5% dividend on capital stock and a 3% patronage dividend. What total dividend did Doun receive?

4. Potvin owns 20 shares of the local co-operative, par value of $10 each. She purchases most of their consumer goods from the co-operative. Last year the total amount of purchases was $860.58. At year-end the directors of the co-operative declare a 6% dividend on capital stock and a 4% patronage refund. Calculate the total dividend Potvin should receive.

5. The Rogers family are members of the Willow Road Co-operative. Mr. Rogers has five shares of the co-operative. Mrs. Rogers has four shares of the co-operative and each of their two children have two shares. All of the shares were purchased at a par value of $10.00. The Rogers purchased gasoline at the co-operative and their total bill for the year was $1173.37. The family uses the grocery section at the store and spent $1564.00. In the hardware section the Rogers spent $463.84. At the end of the year the directors of the co-operative declared a 5% dividend on capital stock and a 3% patronage dividend on all merchandise purchased at the co-operative. What total dividend would the Rogers family receive?

Answer Key

A.1
1. a) $5304
   b) ($2663)
   c) $11 292
   d) $31 160
   e) ($6400)
   f) $27 700
2. $13 270
3. ($11 180); $2090

A.2
1. a) $8728; $6546
   b) $12 015; $8010; $4005
   c) ($20 015); ($16 012)
   d) $20 020; $15 015; $15 015
   e) ($53 154); ($35 436)
   f) $41 600; $31 200; $31 200; $20 800
   g) $72 256; $36 128; $36 128; $36 128
   h) $76 345; $45 807; $30 538
2. $90 015; $90 015; $60 010
3. ($12 080);($9060); ($6040)

A.3
1. a) $14 000; $6000
   b) ($10 998); ($7332)
   c) $13 216; $13 216
   d) $7760; ($5820); ($5820)
   e) $62 250; $37 350; $24 900
   f) $126 480; $63 240; $21 080
   g) ($16 864); ($12 648); ($8432); ($4216)
   h) $56 022; $56 022; $37 348; $37 348
2. $7920; $7920; $3960
3. ($4120); ($3090); ($3090)

A.4
1. a) ($3558); ($1779)
   b) $13 548; $9032
   c) $7147; $10 720.50; $17 867.50
   d) ($3380); ($5070); ($8450)
   e) $75 390; $37 695; $37 695
   f) $60 000; $100 000; $100 000
   g) $50 000; $40 000; $30 000; $30 000
   h) $82 500; $82 500; $68 750; $41 250
2. $65 050; $39 030; $26 020
3. ($10 056); ($8799); ($6285)

A.5 NOTE: Interest must be paid to the partners even if there is a net loss or insufficient net income. The deficit is then divided equally.

1. a) Interest to Partner A $30 000 × 10% = $3000
Interest to Partner B $40 000 × 10% = $4000
Total Interest $7000

Remaining net income $20 000 - $7000 = $13 000
Each partner receives $13 000 × 1/2 = $6500

A's Total Share $3000 + $6500 = $ 9 500
B's Total Share $4000 + $6500 = $10 500
Total $20 000

b) Interest to Partner A $50 000 × 12% = $ 6 000
Interest to Partner B $40 000 × 12% = $ 4 800
Total Interest $10 800

Deficit to be shared $5000 + $10 800 = $15 800
Each partner's share $15 800 ÷ 2 = ($7900)

A's Total Share $6000 - $7900 = ($1900)
B's Total Share $4800 - $7900 = ($3100)
Total ($5000)

c) Interest to Partner A $60 000 × 10% = $ 6 000
Interest to Partner B $50 000 × 10% = $ 5 000
Total Interest $11 000

Deficit to be shared $11 000 - $9000 = $2000
Each partner's share $2000 ÷ 2 = $1000

A's Total Share $6000 - $1000 = $5000
B's Total Share $5000 - $1000 = $4000
Total $9000

d) Interest to Partner A $80 000 × 14% = $11 200
Interest to Partner B $70 000 × 14% = $ 9 800
Total Interest $21 000

Remaining Net Income $29 830 - $21 000 = $8830
Each partner receives $8830 × 1/2 = $4415

A's Total Share $11 200 + $4415 = $15 615
B's Total Share $ 9 800 + $4415 = $14 215
Total $29 830

e) Interest to Partner A $100 000 x 12% = $12 000
Interest to Partner B $ 80 000 x 12% = $ 9 600
Total Interest $21 600

Deficit to be shared $21 600 - $15 000 = $6600
Each partner's share $6600 ÷ 2 = $3300

A's Total Share $12 000 - $3300 = $ 8 700
B's Total Share $ 9 600 - $3300 = $ 6 300
Total $15 000

f) Interest to Partner A $60 000 x 9% = $5400
Interest to Partner B $40 000 x 9% = $3600
Total Interest $9000

Total deficit to be shared $4000 + $9000 = $13 000
Each partner's share $13 000 ÷ 2 = ($6500)

A's Total Share $5400 - $6500 = $1100
B's Total Share $3600 - $6500 = $2900
Total $4000

g) Interest to Partner A $50 000 x 10% = $ 5 000
Interest to Partner B $50 000 x 10% = $ 5 000
Interest to Partner C $40 000 x 10% = $ 4 000
Total Interest $14 000

Remaining net income to divide $80 000 - $14 000 = $66 000
Each partner receives $66 000 x 1/3 = $22 000

A's Total Share $5000 + $22 000 = $27 000
B's Total Share $5000 + $22 000 = $27 000
C's Total Share $4000 + $22 000 = $26 000
Total $80 000

A.6 NOTE: The salary must be paid to the partners even if there is a net loss or an insufficient net income to cover the salaries. The deficit that results would then be divided equally among the partners.

1. a) Salary to Partner A $10 000
Salary to Partner B $ 8 000
Total Salaries $18 000

Remaining Net Income $21 000 - $18 000 = $3000
Each partner receives $3000 x 1/2 = $1500

A's Total Share $10 000 + $1500 = $11 500
B's Total Share $ 8 000 + $1500 = $ 9 500
Total $21 000

b) Salary to Partner A $12 000
Salary to Partner B $ 9 000
Total Salaries $21 000

Deficit to be shared $21 000 - $18 000
Each partner's share $3000 x 1/2 = $1500

A's Total Share $12 000 - $1500 = $10 500
B's Total Share $ 9 000 - $1500 = $ 7 500
Total $18 000

c) Salary to Partner A $ 8 000
Salary to Partner B $ 5 000
Total Salaries $13 000

Total deficit to be shared $13 000 + $6000 = $19 000
Each partner's share $19 000 x 1/2 = $9500

A's Total Share $8000 - $9500 ($1500)
B's Total Share $5000 - $9500 = ($4500)
Total ($6000)

d) Salary to Partner A $15 000
Salary to Partner B $12 000
Total Salaries $27 000

Remaining net income to be shared $44 000 - $27 000 = $17 000
Each partner receives $17 000 x 1/2 = $8500

A's Total Share $15 000 + $8500 = $23 500
B's Total Share $12 000 + $8500 = $20 500
Total $44 000

e) Salary to Partner A $ 9 000
Salary to Partner B $ 6 000
Total Salaries $15 000

Deficit to be shared $15 000 - $13 000 = $2000
Each partner's share $2000 x 1/2 = $1000

A's Total Share $9000 - $1000 = $ 8 000
B's Total Share $6000 - $1000 = $ 5 000
Total $13 000

f) Salary to Partner A $5000
Salary to Partner B $3000
Total Salaries $8000

Total deficit to be shared $8000 + $3000 = $11 000
Each partner's share $11 000 x 1/2 = $5500

A's Total Share $5000 - $5500 = ($ 500)
B's Total Share $3000 - $5500 ($2500)
Total ($3000)

g)

Salary to Partner A	$10 000
Salary to Partner B	$ 8 000
Salary to Partner C	$ 7 000
Total Salaries	$25 000

Remaining net income to divide $52 000 - $25 000 = $27 000
Each partner receives $27 000 x 1/3 = $9000

A's Total Share $10 000 + $9000 = $19 000
B's Total Share $ 8 000 + $9000 = $17 000
C's Total Share $ 7 000 + $9000 = $16 000
Total $52 000

A.7 1. a)

Salary to Pierson	$10 000
Salary to Bennett	$12 000
Total Salaries	$22 000

Interest to Pierson $60 000 x 10% = $ 6 000
Interest to Bennett $50 000 x 10% = $ 5 000
Total Interest $11 000

Total distributed $22 000 + $11 000 = $33 000
Remaining net income to be divided $39 000 - $33 000 = $6000
Each partner receives $6000 x 1/2 = $3000

Pierson's share $10 000 + $6000 + $3000 = $19 000
Bennett's share $12 000 + $5000 + $3000 = $20 000
Total $39 000

b)

Salary to Holmes	$ 8 000
Salary to Patterson	$ 7 000
Total Salaries	$15 000

Interest to Holmes $80 000 x 12% = $ 9 600
Interest to Patterson $70 000 x 12% = $ 8 400
Total Interest $18 000

Total distributed $15 000 + $18 000 = $33 000
Deficit to be shared $33 000 - $21 000 = $12 000
Each partner's share of the deficit $12 000 x 1/2 = $6000

Holme's total share $8000 + $9600 - $6000 = $11 600
Patterson's total share $7000 + $8400 - $6000 = $ 9 400
Total $21 000

c) Salary to Mann $ 5 000
Salary to Wilson $ 7 000
Total Salaries $12 000

Interest to Mann $20 000 x 8% = $1600
Interest to Wilson $18 000 x 8% = $1440
Total Interest $3040

Total distributed $12 000 + $3040 = $15 040
Total deficit to be shared $15 040 + $6000 = $21 040
Each partner's share $21 040 x 1/2 = $10 520

Mann's total share $5000 + $1600 - $10 520 = ($3920)
Wilson's total share $7000 + $1440 - $10 520 = ($2080)
Total ($6000)

d) Salary to Stanley $10 000
Salary to Horton $ 9 000
Salary to Kelly $12 000
Total Salaries $31 000

Interest to Stanley $80 000 x 12% = $ 9 600
Interest to Horton $75 000 x 12% = $ 9 000
Interest to Kelly $70 000 x 12% = $ 8 400
Total Interest $27 000

Total distributed $31 000 + $27 000 = $58 000
Remaining net income to be divided $121 650 - $58 000 = $63 660
Each partner receives $63 660 x 1/3 = $21 220

Stanley's total share $10 000 + $9600 + $21 220 = $40 220
Horton's total share $ 9 000 + $9000 + $21 220 = $39 220
Kelly's total share $12 000 + $8400 + $21 220 = $41 620
Total $121 060

B.1
1. a) 10%
b) 5%
c) 5%
d) 2%
e) 6%
f) 2%
g) 0.5%
2. 7.5%
3. 13.2%
4. 3%

B.2
1. a) $2.50
b) $1.45
c) $1.30
d) $0.20
e) $0.75
f) $0.30
2. $2.10
3. $1.85
4. $1.60
5. $2.15

B.3
1. a) $0
b) $7650
c) $55 431
d) $65 560
e) $19 000
f) $275 000
g) $362 000
2. $50 632
3. $13 600
4. $34 982

B.4
1. a) $30 000; 15%
b) $200 000; 8%
c) $150 000; 12%
d) $25 000; 4.5%
e) $400 000; 10%
f) $500 000; 16.7%
g) $100 000; 5.7%
2. 6.7%
3. 5.8%
4. 3.4%

B.5
1. a) $100 000; $100.00
b) $31 250; $1.25
c) $360 000; $7.20
d) $290 000; $2.90
e) $1 110 000; $5.55
f) $2 880 000; $2.88
2. $2.25
3. $3.60
4. $2.80
5. $6.85

C.1
1. $16.27
2. $37.10
3. $17.76
4. $25.58
5. $322.49

C.2
1. $8.00
2. $3.00
3. $9.38

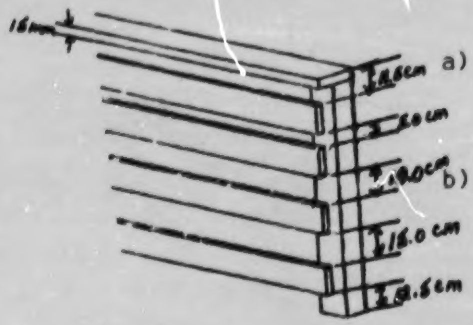
C.3
1. a) $0.75; $36.90; $37.65
b) $5.60; $17.78; $23.38
c) $12.00; $30.58; $42.58
d) $1.40; $13.07; $14.47
e) $20.00; $34.28; $54.28
2. $86.72
3. $12.65
4. $46.42
5. $102.54

OP.V. Building Trades

A.1

1. A ring gear that measures 37.27 cm inside diameter will expand 0.19 cm on the diameter when heated. What is the diameter when heated?

2. The hole for a piston pin has worn 0.03 mm. What size is the hole if it was originally 20.76 mm?

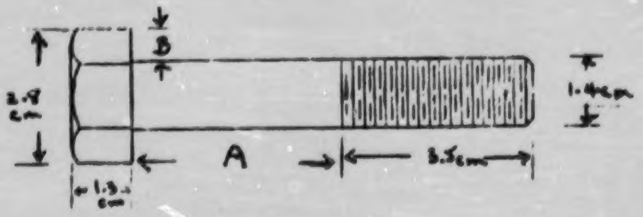
3. 

   a) What is the total height of the fence illustrated if each fence rail is 100 cm?

   b) If each rail was to be equally spaced from the top plate to the ground, what would be the space between each rail?

4. a) For the machine screw illustrated, determine the length of A, if the overall length was 8.9 cm.

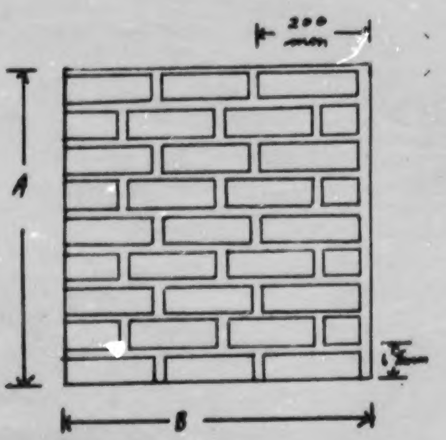
   b) What is the length of B?



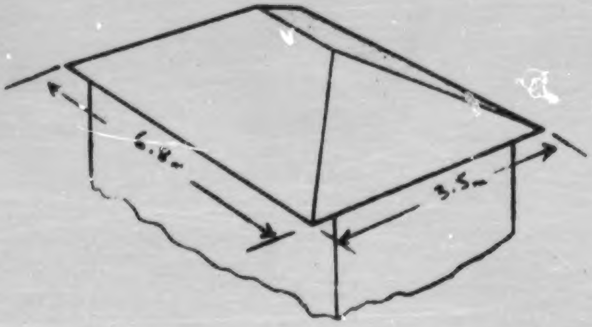
5. A length of a baseboard is divided into 8 equal segments. If each segment is 43.5 cm, what is the total length of the board?

6. The total run of stairs is 262.8 cm. Each tread of the rough stringer is 21.9 cm. How many treads are there in the stairs?

7. What are the dimensions of the illustrated modular panel which forms part of a wall (find the measurements of A and B)?



8. If eave troughing is to be put around this hip roof, calculate the number of metres required.



A.2 1. In constructing a residence, 2% of the total cost is allowed for excavation. How much would the excavated cost for a house costing $116 000 be?

2. The carpentry and millwork on a new residence amounts to $36 756. A contractor figures 67% of this amount as the cost of material and the remaining for labor. What are his labor costs in dollars and cents?

3. If gear castings weigh 148 kg and finished gears weigh 130 kg, what percent of the metal is removed in finishing?

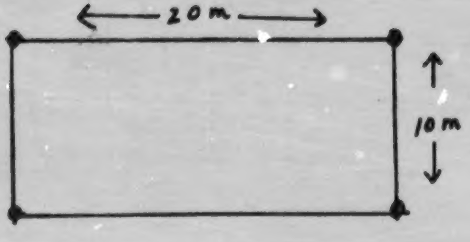
4. In certain sheet metal work, 5% of total material used is wasted. How many sheets would you begin with if the job actually required 12 sheets?

5. In making mortar, the amount of lime used is 12% of the cement.
   a) How much lime is necessary if 450 kg of cement are used?
   b) If 66 kg of lime is required, how much cement was used?

6. For a subfloor applied diagonally, 25% of the total material is wasted. How much subflooring should be allowed for a house 15 m by 9.5 m?

7. During a certain riveting job, 50 rivets of a total of 1000 rivets are spoiled. What percent were good rivets?

8.

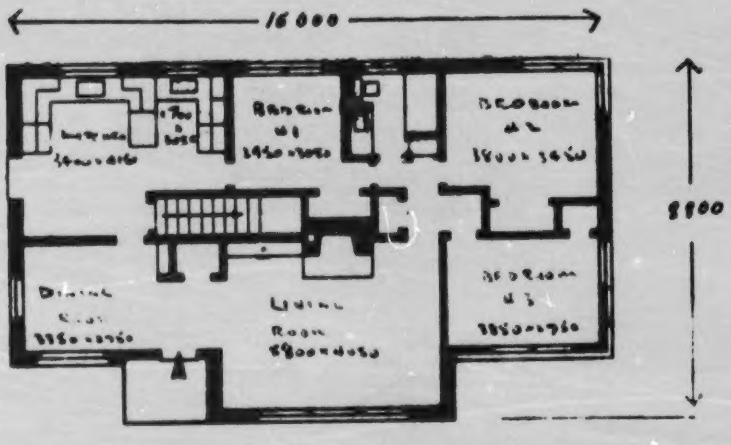


For the above excavation:

a) If the length was increased by 3 m, by what percent rate is the total area increased?

b) If the length was increased by 5%, by what percent rate is the total area increased?

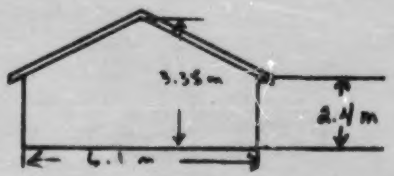
B.1 1. For the following floor plan:



a) How much carpeting is needed for all 3 bedrooms?

b) How much larger is bedroom #2 than bedroom #1?

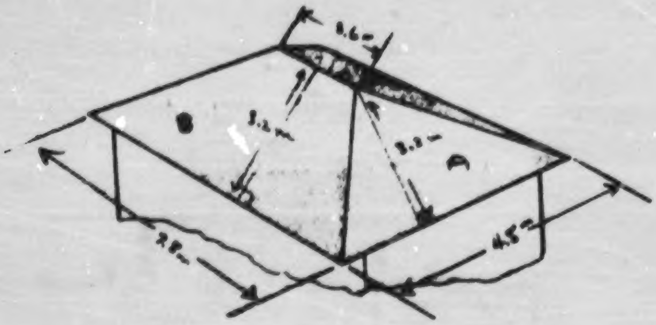
2.



For the end-view of the house illustrated:

a) What is the area?
b) If it costs $9.50/m^2$ to put stucco and wire, what is the cost for only this end?

3. For the hip roof illustrated:

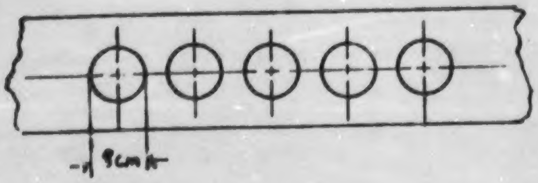


a) Calculate the area of A and of B.
b) What is the total area of the roof?
c) If one standard sized asphalt shingle covers (allowing for overlap) 0.117 m^2, how many shingles would be needed to cover this roof?

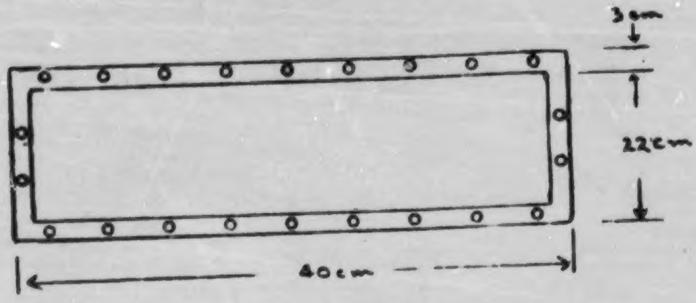
4. A rectangular cold air return 216 mm deep, 700 mm wide and 3 m long is being made of sheet metal. Ten percent of the total area is allowed for waste (cutting and lapping). How much sheet metal is required?

5. If a 3 metre piece of ABS plastic pipe has an outside diameter of 76 mm and an inside diameter of 72 mm, what is the cross-sectional area of the pipe?

6. For the illustrated exhaust manifold, calculate the total area of the ports.



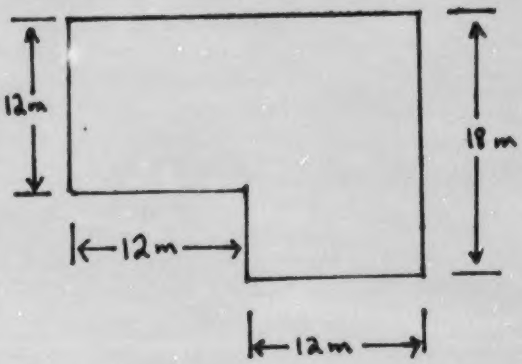
7. If each hole in the illustrated gasket has a diameter of 1 cm, what is the top surface area of the gasket?



B.2

1. How much dirt is removed from a basement excavation if the hole is about 14 m long, 11 m wide, and 2 m deep?

2. A 1.5 m deep basement is to be excavated for the L-shaped building shown on the right. How many cubic meters of dirt must be removed?



3. A 40 cm square sheet of metal has 5 cm squares cut from each corner. The resulting flaps are turned up to form sides of a square box.
   a) Using a piece of scrap paper, perform the construction and write the dimensions of the resulting box.
   b) Calculate the volume of the box.

4. a) What is the volume of a circular pan if the diameter is 26 cm and the height is 3.5 cm?
   b) If 1000 cm^3 = 1 L, what is the capacity of the pan in litres?

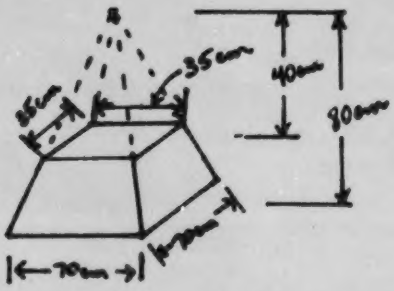
5. How much concrete is needed to pour 12 concrete pilings if each piling has a diameter of 1 m and is 15 m deep?

6. How many kilolitres of water could be stored in a cylindrical tank, 10 m in diameter and 9 m high? The volume of a cylinder is given by $V = \pi r^2 h$ where π is about 3.14, r is the radius of the tank, and h is the height of the tank. Also, 1 m^3 will hold 1 kL.

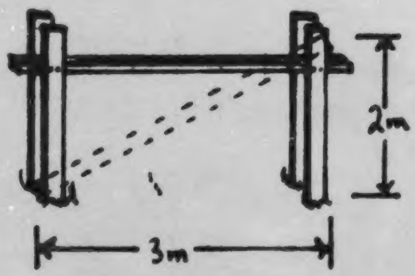
7. Find the volume of a steel cylindrical rod which is 2.7 m long with a diameter of 2.4 cm.

8. How many m^3 of sand would you have in a cone shaped pile 6.2 m high with a diameter of 18.4 m? The volume of a cone is given by $V = 1/3 \pi r^2 h$ where $\pi \approx 3.14$, r is the radius of the pile and h is the height of the pile.

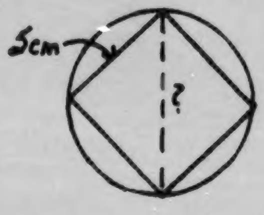
9. The volume of a pyramidal shaped object is given by $V = 1/3 lwh$ where l is the length of the base, w is the width of the base, and h is the height of the pyramid. Find the volume of concrete needed to pour a base for a light standard if the base has the shape of a square pyramid with the top section cut off.



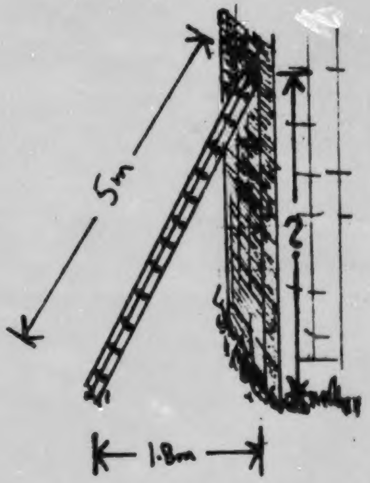
C.1 1. What length of board would you need to firm up a wooden scaffold that is 2 m high and 3 m long? The board must extend from the lower left to the upper right.



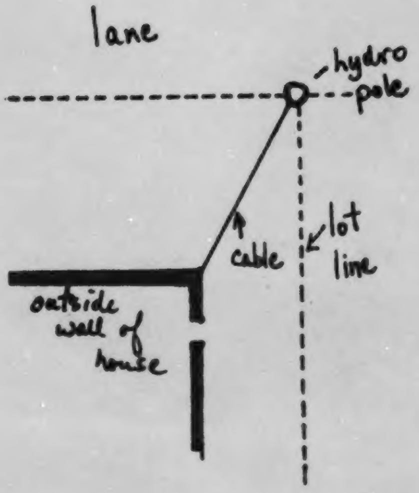
2. A square bar, 5 cm on a side, is to be milled from a circular rod. Which size of rod would you use: one of diameter 5 cm, 6 cm, 7 cm, or 8 cm?



3. How far up the wall will a 5 m ladder extend if the base of the ladder is placed 1.8 m from the base of the wall?

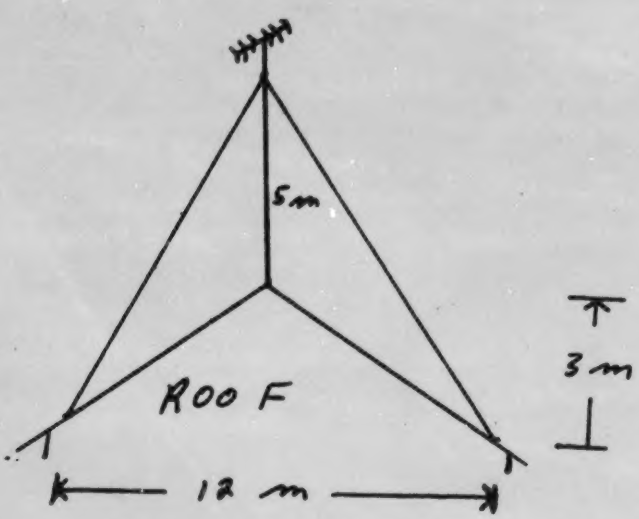


4. What would be the length of an electrical cable that reaches from the hydro pole to the house, if the house is set back from the lane 23 m and the side of the house is 9 m from the lot line?



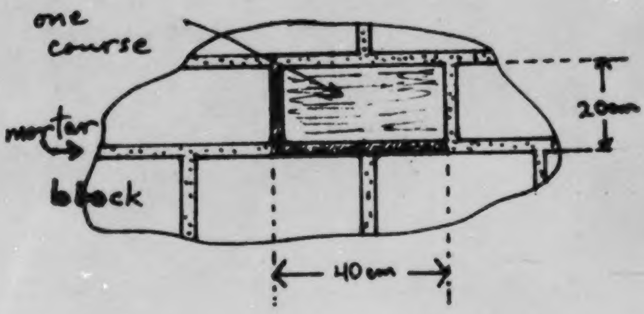
5. A worker had to put up a hydro pole 11 m long. The pole was set 3 m deep in the ground and was supported by a guy wire 13.6 m long. How far from the base of the pole (ground level) should the peg holding the guy wire be sunk?

6. Calculate the length of each guy wire needed to support the T. V. antenna as shown in the diagram.



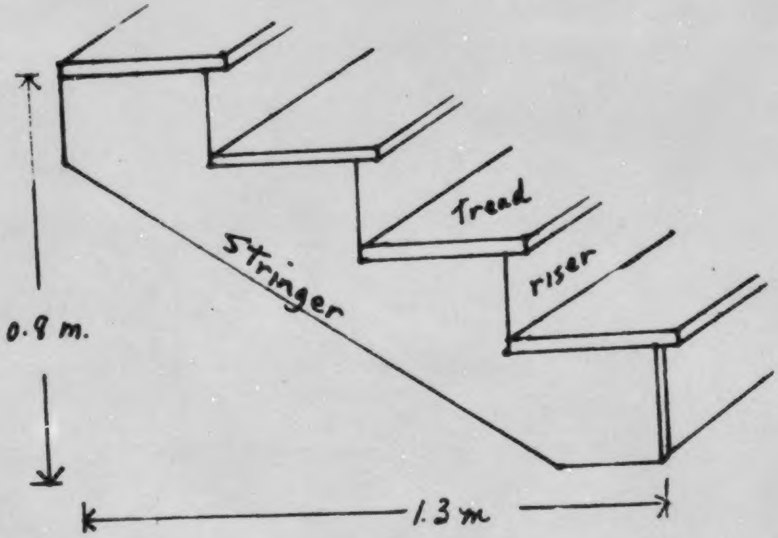
C.2

1. How many concrete blocks would be needed to build a foundation wall 3 m high and 10 m long? One course (the block along with its mortar) is 40 cm long and 20 cm high.

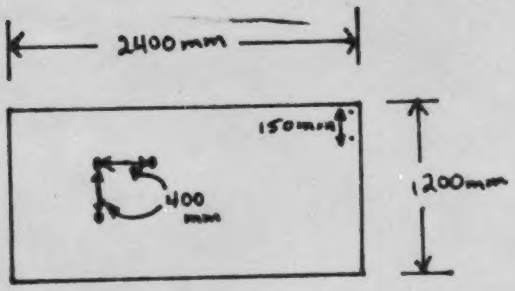


2. How many studs do you need to build a wall section 4 m long if the studs are 400 mm on center and you need double studs at each end?

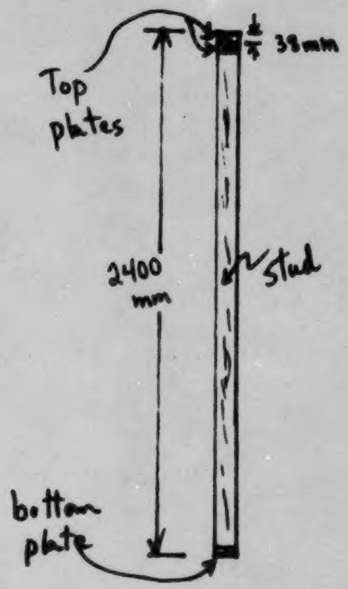
3. How long a board would you need to use as a stringer for a set of stairs with a total rise of 0.8 m and a total run of 1.3 m?



4. How many screws do you need for each drywall sheet if each sheet is 1200 mm by 2400 mm and the suggested screw pattern is as follows: 150 mm apart along an edge and 400 mm apart in the interior.



5. How long should the stud be so that the total height of the wall section is 2400 mm and each "2 x 4" is 38 mm thick? The total height is made up of one bottom plate (38 mm thick), a stud, and two top plates (each 38 mm thick).



6. How many floor joints are required in a building 24 m long by 18 m wide if the joists are spaced 40 cm on centre?

7. A fence was to be built joining two buildings 30 m apart. If the posts were placed every 3 m on centre, how many posts are needed? (Assume that a post is required next to each building.)

8. A corral 42 m x 30 m is built with posts spaced 3 m on centre. How many posts are required?

D.

1. Determine E-E length for a 19 mm pipe whose C-C length is 320 mm with two 90° ells.

2. Determine E-E length for a 50 mm pipe whose C-C length is 450 mm with two 90° ells.

3. Determine E-E length for a 75 mm pipe whose C-C length is 110 mm with two 45° ells.

4. Determine E-E length for a 100 mm pipe whose C-C length is 145 mm with one 90° ell and one 45° ell.

5. Determine E-E length for a pipe required to connect two parallel 19 mm pipes if the offset is 130 mm using two 90° fittings.

6. Determine E-E length for a pipe required to connect two 19 mm pipes if the offset is 200 mm using one 90° fitting and one 45° fitting.

7. Determine E-E length for a pipe required to connect two parallel 100 mm pipes if the travel is 144 mm using two 45° fittings.

8. Determine E-E length for a pipe required to connect two parallel 75 mm pipes if the travel is 98 mm using two 45° fittings.

9. Determine E-E length for a pipe required to connect two parallel 75 mm pipes if the offset is 100 mm using two 45° fittings.

10. Determine E-E length for a pipe required to connect two parallel 100 mm pipes if the offset is 150 mm using two 45° fittings.

11. Determine E-E length for a pipe required to connect two parallel 13 mm pipes if the offset is 90 mm using two 45° fittings.

E.I

1. Find the allowance of material needed for a single hem given the following widths of the seams (one side only).
   a) 5 mm ______
   b) 6 mm ______
   c) 7 mm ______
   d) 4.5 mm ______
   e) 5.5 mm ______

2. Find the allowance of material needed for a single hem given the following widths of the seams for one or two sides.
   a) 5 mm (two sides) ______
   b) 8 mm (one side) ______
   c) 6.5 mm (two sides) ______
   d) 7.5 mm (two sides) ______
   e) 5.5 mm (one side) ______
   f) 6 mm (two sides) ______
   g) 9 mm (one side) ______

3. Find the allowances for material needed for a double hem for one or two sides given the following dimensions.

	Width of hem	No. of sides	Allowance
a)	5 mm	2	
b)	8 mm	2	
c)	6.5 mm	1	
d)	7.5 mm	2	
e)	5.5 mm	1	
f)	6 mm	1	
g)	9 mm	2	

4. Find the allowances for material for a wired edge.

	Diameter	No. of sides	Allowance
a)	5 mm	2	
b)	8 mm	1	
c)	6 mm	2	
d)	5.5 mm	2	
e)	4.5 mm	1	
f)	6.5 mm	1	
g)	7 mm	2	

E.2

1. Compute the size of the stretch-outs for the following square pipes with pipe-butt or welded seams.

	S	L	SW	SL
a)	10 cm	4 m		
b)	13 cm	1.5 m		
c)	11.5 cm	22 m		
d)	15 cm	5 m		
e)	25 cm	42 m		

2. Compute the size of the stretch-outs for the following rectangular pipes with pipe-butt or welded seams.

	Height	Width	L	SW	SL
a)	8 cm	12 cm	100 cm		
b)	10 cm	18 cm	200 cm		
c)	20 cm	30 cm	400 cm		
d)	18 cm	24 cm	6 m		
e)	30 cm	45 cm	12 m		

3. Compute the size of the stretch-outs for the following circular pipes with pipe-butt or welded seams.

	Diameter	L	SW	SL
a)	10 cm	40 cm	________	________
b)	15 cm	5 m	________	________
c)	25 cm	83 cm	________	________
d)	30 cm	147 cm	________	________
e)	60 cm	40 m	________	________

4. Compute the length and width of stretch-outs for boxes (without edges).

	Height	Width	L	SW	SL
a)	5 cm	18 cm	50 cm	________	________
b)	7 cm	25 cm	40 cm	________	________
c)	9 cm	30 cm	100 cm	________	________
d)	15 cm	10 cm	1.5 m	________	________
e)	40 cm	48 cm	2 m	________	________

F.1

1. The stretcher face of a modular, nominal, metric brick measures 200 mm by 67 mm. How many of these bricks would be required to cover the area equivalent to a modular panel which measures 600 mm by 600 mm? Round off to the nearest whole number.

2. How many modular panels (600 x 600 mm) would there be in one square metre of surface? Answer correct to two decimal places.

3. When estimating the number of bricks required for a veneer of standard, modular bricks, the surface area to be covered is measured in square metres. Compute the number of bricks to be allowed for every square metre of surface. Express the answer to the nearest whole number. Refer to question #1 for the dimensions of the stretcher face.

F.2

1. The end wall of a house measures 6 m by 2 m high. The triangular gable end has an altitude of 1.5 m. Determine the total area of the end wall. Express the answer correct to two decimal places.

2. Calculate the number of standard, modular bricks required to cover the end wall in question #1, with a running bond veneer. Round off the answer to the nearest whole number.

3. The floor of a small shop measures 5 m by 8 m. The walls are 2.5 m high and are to be covered by a veneer of standard modular bricks. All the walls are rectangular. There are no gables.

a) Calculate the total wall area in square metres. (Hint. Consider the fact that the thickness of the veneer adds about 100 mm (0.1 m) to the length of each wall.) Express the total area correct to two decimal places.

b) If 15% of the wall area will be windows and doors determine the area to be covered by the veneer. Answer correct to two decimal places.

c) Calculate the number of bricks required for the veneer in exercise 3(b).

F.3 1. There are 500 bricks on every pallet of standard modular bricks. If a contractor orders 5 pallets for a job requiring 2200 bricks, express the waste factor he has allowed, as a percent rate, accurate to one decimal place.

2. Express the waste factor allowed, as a percent rate, when the estimator allows 80 br/m^2 instead of 75 br/m^2. (Accurate to one decimal place.)

3. Stoney Mason ordered 8500 bricks for a job. Of this total 800 bricks were extra. Calculate the waste factor allowed as a percent rate, accurate to one decimal place.

F.4 1. The rough opening for a door has a width equal to length of 6 modular bricks. Carefully calculate the width of the rough opening, accurate to the nearest milli-metre.

F.5 1. Determine the width of a masonry panel between the rough openings for two windows, if the width of the panel is equivalent to the length of 5 modular bricks. (Accurate to the nearest milli-metre.)

F.6 1. The stretcher face of a standard concrete block measures 200 mm by 400 mm. Determine the number of blocks required to cover one square metre. Answer correct to one decimal place.

2. A warehouse is to be constructed of standard concrete blocks (see the dimensions in question #1) in the running bond pattern. Determine the number of blocks required for one wall measuring 18 m long and 4.5 m high. Round off to the nearest whole number.

3. Sometimes a wall is built of blocks so it is twice as thick as a running bond wall. In this case every second course would be headers so as to bond the two veneers together. Determine the number of blocks required per square metre for such a wall measuring 13 m long and 3.5 m high.

F.7 1. A garden wall is to be built of standard concrete blocks (half of them piano blocks) in the running bond pattern. The wall will have a veneer of standard modular bricks in the American bond pattern. The veneer will have one course of headers for every five courses of stretchers. The header courses bond the veneer to the piano blocks. Determine the number of standard concrete blocks, piano blocks and modular bricks required if the wall is 30 m long and 2 m high.

F.8 1. A chimney is to be constructed of a castable flu lining and standard modular bricks. How many courses of modular bricks around the flu lining will there be for every metre of chimney height? (Hint. The bricks around the lining are in the same orientation as stretchers in a running bond.)

2. The outside dimensions of a flu lining are 200 mm by 400 mm. How many standard modular bricks are required to build a 7 m high chimney if a single veneer is built around the 200 x 400 mm flu lining? (Hint. Sketch a typical course around the flu lining.)

3. Calculate the total number of standard, modular bricks required to build a 12 m chimney with a 200 mm by 200 mm flu lining if the bottom 5 m of the chimney have a double brick veneer and the top 7 m have only a single veneer. (Draw a sketch of a typical course and count the number of bricks per course.)

F.9 1. Determine the face brick to back-up brick ratio for a double thickness English bond wall. (Hint. Sketch the English bond pattern with the mortar joints lined up. You cannot build it this way, but it will help to determine the ratio.

2. Determine the face brick to back-up brick ratio in Flemish bond.

3. A Flemish bond wall was constructed of 3600 bricks. How many are face bricks?

F.10

1. Muriatic acid consists of 1 part acid (HCl) and 9 parts water. How much water should be added to 6 L of muriatic acid if 3 L of the solution are HCl?

2. Alex Runningbond made a muriatic acid solution which was far too weak. He mixed 2 L of HCl with 36 L of water. How many litres of HCl must be added?

Answer Key

A.1
1. 37.46 cm
2. 20.79 mm
3. a) 445.5 cm
   b) 8.8 cm
4. a) 4.1 cm
   b) 0.7 cm
5. 348 cm
6. 12 treads
7. A is 603 mm; B is 60 mm
8. 20.6 m

A.2
1. \$2, 320.00
2. \$12,129.48
3. 12.16%
4. 13 sheets
5. a) 54 kg
   b) 550 kg
6. 178.125 m^2
7. 5%
8. a) 15%
   b) 5%

B.1
1. a) 32.7 m^2
   b) 4.11 m^2
2. a) 17.54 m^2
   b) \$166.63
3. a) A = 7.2 m^2; B = 18.24 m^2
   b) 50.88 m^2
   c) 435 shingles
4. 6.05 m^2
5. 464.96 mm^2
6. 402.12 cm^2
7. 336.72 cm^2

B.2
1. 308 m^3
2. 540 m^3
3. b) 4500 cm^3
4. a) 1858.25 cm^3
   b) 1.86 L
5. 141.37 m^3
6. 706.86 KL
7. 1221.45 cm^3
8. 549.54 m^3
9. 114 333.33 cm^3

C.1
1. 3.61 m
2. 7 cm
3. 4.66 m
4. 24.70 m
5. 11.0 m
6. 10 m

C.2
1. 375 blocks
2. 13 studs
3. 1.53 m
4. 58 screws
5. 2286 mm
6. 61 joists
7. 11 posts
8. 38 posts

D.1
1. 276 mm
2. 374 mm
3. 64 mm 4. 47 mm
5. 86 mm
6. 166 mm
7. 90 mm
8. 52 mm
9. 95.42 mm
10. 158.13 mm
11. 109.28 mm

E.1
1. a) 5 mm
b) 6 mm
c) 7 mm
d) 4.5 mm
e) 5.5 mm

2. a) 10 mm
b) 8 mm
c) 13 mm
d) 15 mm
e) 5.5 mm
f) 12 mm
g) 9 mm

3. a) 20 mm
b) 32 mm
c) 13 mm
d) 30 mm
e) 11 mm
f) 12 mm
g) 36 mm

4. a) 25 mm
b) 20 mm
c) 30 mm
d) 27.5 mm
e) 11.25 mm
f) 16.25 mm
g) 35 mm

E.2

1.

	SW	SL
a)	4 m	40 cm
b)	1.5 m	42 cm
c)	22 m	46 cm
d)	5 m	60 cm
e)	42 m	100 cm

2.

	SW	SL
a)	100 cm	42 cm
b)	200 cm	56 cm
c)	400 cm	100 cm
d)	6 m	84 cm
e)	12 m	150 cm

3.

	SW	SL
a)	40 cm	31.42 cm
b)	5 m	47.12 cm
c)	83 cm	78.54 cm
d)	147 cm	94.25 cm
e)	40 m	188.50 cm

4.

	SW	SL
a)	28 cm	60 cm
b)	39 cm	54 cm
c)	48 cm	118 cm
d)	40 cm	180 cm
e)	128 cm	280 cm

F.1

1. 26.86 or 27 bricks
2. 2.78 panels
3. 75.06 or 75 bricks

F.2

1. 16.5 m^2
2. 1238 bricks
3. a) 66.00 m^2
   b) 56.10 m^2
   c) 4208

F.3

1. 13.6%
2. 6.7%
3. 10.4%

F.4
1. Because the bricks of the interrupted courses touch the door jam, the actual rough opening is equivalent to the length of 6 modular, nominal bricks and one more mortar joint.
W = 6 x 200 + 10 = 1210 mm

F.5
1. Draw the sketch. The panel width will be one mortar joint less than the nominal length of five modular bricks.
W = 5 x 200 - 10 = 990 mm.

F.6
1. 12.5 blocks
2. 1013 blocks
3. 1138 blocks

F.7
1. Total blocks is 30 x 2 x 12.5 = 750.
Therefore 375 piano blocks and 375 regular blocks are required.
The number of modular bricks is 5250

F.8
1. 15 courses
2. 840 bricks
3. 1830 bricks

F.9
1. Three bricks are visible and there is one behind the stretcher.
Therefore the ratio is 3:1.

2. Four bricks are visible and there are two more back-up stretchers.
Therefore the ratio is 4:2 or 2:1.

3. 2400 face bricks

F.10
1. 24 L
2. 2 L

OP.VI. MECHANICAL TRADES

1. There are three types of measurement of uniformly shaped objects. Explain the following as well as you can and give an example of each:
   a) linear measure.
   b) surface measure.
   c) volume measure.

2.

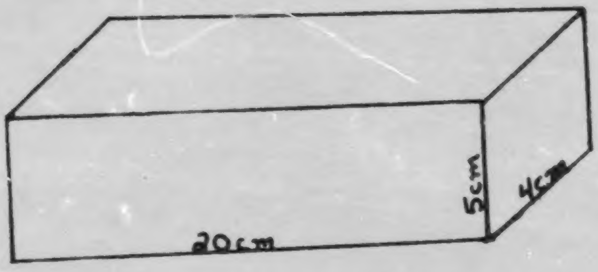


Figure A

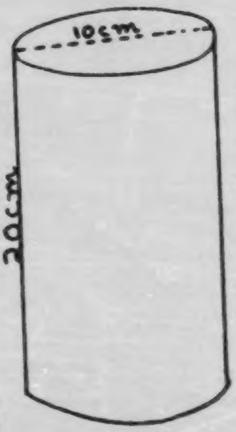


Figure B

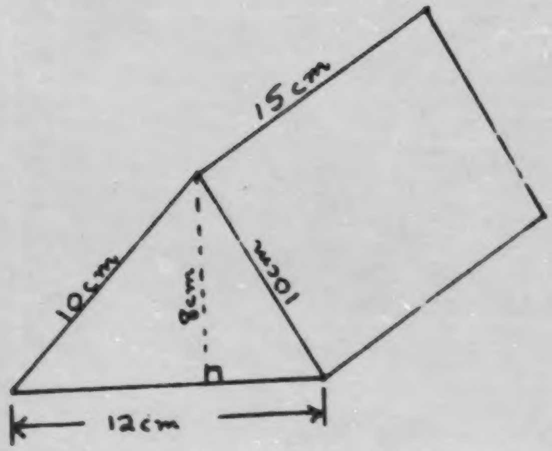


Figure C

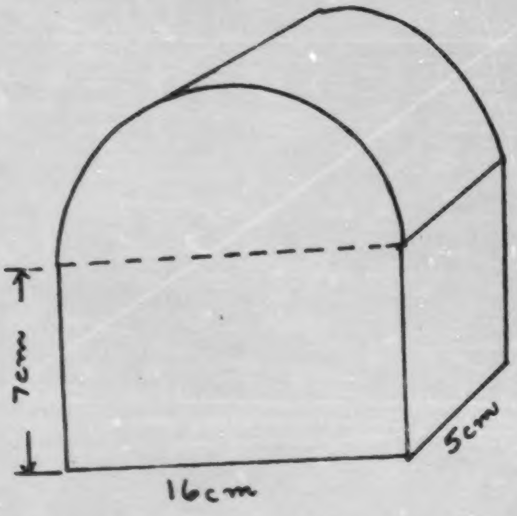


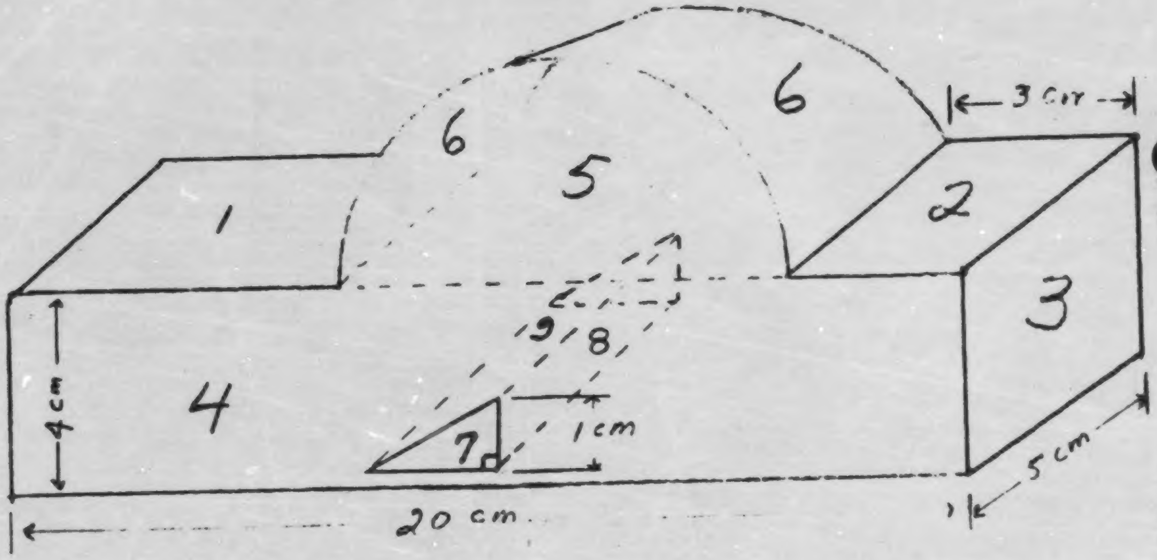
Figure D

Find the perimeter of each of the following from the preceeding diagrams.
a) the bottom of Figure A
b) the top of the cylinder, B.
c) the triangular face of Figure C

3. Find the total surface area of each figure in question #2.

4. Find the volume of each figure in question #2.

5.



NOTES:
- The numbers indicate the various surface sections.
- Area 5 is a semi-circle with a radius of 5 cm.
- The base of triangle 7 is twice as long as the altitude.
- The triangular prism with end 7 represents a hollow space through the solid.
- There are no numbers shown for the bottom of the prism or the bottom of the solid.

Determine the perimeter of:

a) Section 1
b) Section 4
c) The bottom of the whole solid
d) Section 2
e) Section 8
f) Section 5 (the diameter is the lower boundary)
g) Section 6 (all one piece)

6. Determine the area of:

a) Section 1
b) Section 3
c) Section 7
d) Section 8
e) Section 9 (find the hypotenuse)
f) The bottom of the prism
g) Section 5
h) Section 6 (all one piece)

7. Determine the volume of:

a) Triangular prism (hollow space)
b) The half-moon projection on the top (semi-circular)
c) The rectangular solid including the prism
d) Find the total volume of the solid (excluding the prism)

2 1. How many mm^3 are there in 1 cm^3?

2. How many cm^3 are there in 1 m^3?

3. How many litres are there in 1 m^3?

4. How many cm^3 are there in 1.75 kL?

5. What is the cross-sectional area of a pipe with an inside diameter of 50 mm?

6. Determine the volume, in mm^3, of a test tube measuring 12 cm in length and 1.5 cm in diameter.

7. a) Calculate the volume, in cm^3, of an 8 m pipe and inside diameter of 6 cm.

   b) Express the answer in litres.

8. How many kL of oil can be stored in a cylindrical storage tank which has a diameter of 15 m and stands 20 m high?

3 In case the students didn't take options IV and V in Mathematics 101, refer to those modules for development and exercises.

4,5 1. Draw three simple sketches illustrating each of the three types of levers. In each case label the effort distance, the resistance distance and the fulcrum. Can you think of a practical application of each one?

2. Classify the following devices as a class 1, 2 or 3 lever.

   a) Scissors
   b) Nut cracker
   c) Winch (raising a bucket of water in a well on a windlass)
   d) Sprocket on a bicycle wheel
   e) Wrecking bar
   f) Steering wheel

3. What is the MA of any simple level when the effort distance (ED) is the same as the resistance distance (RD)?

4. Calculate MA when (ED) = 2(RD).

5. If the ED is 6 m and the RD is 1 m, what is the MA?

6. The handle (ED) of a wrecking bar measures 0.65 m and the (RD) is 10 cm. What is the MA?

7. The jaws of a needle nose pliers extend 75 mm beyond the fulcrum and the hand grips are 250 mm long. What is the maximum MA of this tool?

8. The sprocket on a bicycle wheel has a radius of 60 mm and the radius of the wheel to the outside of the tire is 300 mm. Calculate the MA.

9. To calculate the MA of a hydraulic hoist, the surface areas of two pistons are compared. The effort is applied to a small piston (effort surface). This pumping action applies pressure to the fluid and the pressure is applied to a larger piston (resistance surface). Now the MA calculation is: MA = R(surface)/E(surface). Since the pistons are round, the calculation requires you to compare the area of 2 circles. What is the MA of a hydraulic hoist if the effort piston has a radius of 15 mm and the resistance piston has a radius of 45 mm?

10. What is the MA of a screw jack which has a turning lever 1 m long and a thread pitch (RD) of 5 mm? (HINT: The effort distance is the circumference of the sweep of the handle.)

11. What is the MA when a 10 cm (radius) gear is driving a 45 cm (radius) gear? Compare the circumference of the large gear to the circumference of the smaller one. Since this is a linear ratio, you will achieve the same results by comparing the radii. MA = radius of driven/radius of driver = torque.

12. The MA of a block and tackle set is simply the number of supporting ropes, not counting the rope you pull on. If you weigh 85 kg, how much mass could you lift with a block and tackle set having 6 supporting ropes? (Disregard the effect of friction.)

13. The engine block assembly has a mass of 180 kg. How much mass (effort) would be required to lift it with a block and tackle set which has four supporting chains? Add 30 kg to the resistance to allow for friction.

14. Explain how to use a single pulley for maximum effect.

6

1. For each of the following pairs of gears, find the missing information.

D_1 = diameter of gear 1
D_2 = diameter of gear 2

RPM_1 = RPM of gear 1
RPM_2 = RPM of gear 2

	D_1	RPM_1	D_2	RPM_2
a)	7 mm	60	4 mm	____
b)	10 mm	100	20 mm	____
c)	10 mm	____	30 mm	500
d)	8 cm	300	____	600
e)	____	400	9 cm	200
f)	____	3000	18 cm	8000
g)	24 cm	600	____	200

2. Make a sketch of 5 gears (meshed) in a train and number them 1 to 5. Data: Gear 1 is the driver.

Gear	Diameter	RPM
1	80 mm	200
2	7 cm	
3	12 cm	
4	100 mm	
5	15 cm	

Calculate the RPM for gears 2, 3, 4, and 5.

3. What is the effect of an idler gear?

4. The cutting speed (Cs) of a work piece on a lathe is simply the speed of the surface of the rotating work piece. Consider the circumference rotating at a given RPM. If the diameter of the work piece is 70 mm and it is rotating at 10 RPM, determine the cutting speed in mm/minute.

Answer Key

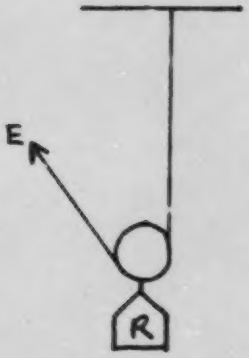
1 1. a) Linear measure involves straight or curved lines; single dimensions.
   b) Surface measure involves units of area--the product of 2 linear dimensions.
   c) Volume measure involves units of occupied space--the product of 3 linear dimensions.

2. a) 48 cm
   b) 31.42 cm
   c) 32 cm
3. A-400 cm^2; B-785.40 cm^2; C-576 cm^2; D-600.72 cm^2
4. A-400 cm^3; B-1570.80 cm^3; C-720 cm^3; D-1062.65 cm^3
5. a) 24 cm
   b) 48 cm
   c) 16 cm
   d) 16 cm
   e) 12 cm
   f) 25.7 cm
   g) 41.4 cm
6. a) 35 cm^2
   b) 20 cm^2
   c) 1 cm^2
   d) 5 cm^2
   e) 11.18 cm^2
   f) 10 cm^2
   g) 39.27 cm^2
   h) 78.54 cm^2
7. a) 5 cm^3
   b) 196.35 cm^3
   c) 400 cm^3
   d) 491.35 cm^3

2 1. 1000 mm^3
2. 1 000 000 cm^3
3. 1000 L
4. 1 750 000 cm^3
5. 1 963.50 mm^2
6. 22 619.47 cm^3
7. a) 22 619.47 cm^3
   b) 22.62 L
8. 3534.29 kL

4,5 1. See study guide.
2. a) 1
   b) 2
   c) 2
   d) 3
   e) 1
   f) 2
3. 1
4. 2
5. 6
6. 5.5
7. 250
8. 1/5

9. 9
10. 62.83
11. 4.5
12. 510 kg
13. 75 kg
14.

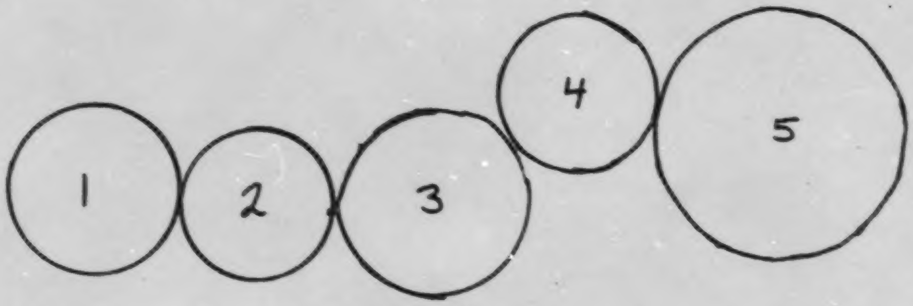


Tie the pulley to the resistance.

6

1. a) 105 rpm
   b) 50 rpm
   c) 166.67 rpm
   d) 4 mm
   e) 4.5 cm
   f) 48 cm
   g) 72 cm

2. 228.57; 133.33; 160; 106.67



3. An idler gear changes direction. (It also allows a transfer of power over distance.)

4. 2199.11 mm/minute

OP.VII. ELECTRICAL TRADES

1-3 1. Make a sketch of a simple DC circuit consisting of a battery and two resistors connected in series. Assign arbitrary values to the battery and the resistors. Use the proper symbols in the sketch.

2. Explain the meaning of voltage, resistance, and current in your own words. Give the symbol of each.

3. Give the name and its symbol of the unit of measurement for each of voltage, resistance and currents.

4-6 1. Compute the total resistance of three resistors in series when their values are 50Ω, 75Ω, and 200Ω. Practice using the symbol of the unit in your answer.

2. A 15V battery is connected to a series of circuits with a total resistance of 325Ω. Compute the current flow.
   a) Express the answer in amperes correct to three decimal places.
   b) Express the answer in milli-amperes. Be careful to use the unit symbols correctly.

3. In a series, DC circuit the current flow is 2.35A and the total resistance if 15.5Ω. Determine the voltage applied to the circuit. Express the answer to one decimal place and use the voltage symbol correctly.

4. R_1, R_2 and R_3 are connected in series and their values are 800Ω, 1450Ω, and 480Ω respectively. Compute the three separate voltage drops across the resistors if the applied voltage is 13.65V. Be sure to use the correct symbol. Express the answer correct to two decimal places.

7 1. R_1 and R_2 are connected in series to a 10V battery. If the voltage drop VR_1, across R_1 is 6.35V, compute VR_2. Express the answer correct to two decimal places and use the correct symbol.

8-9 1. To show that you know the difference between a series and a parallel connection, make a simple sketch of R_1 and R_2 connected in series with a battery and another sketch showing the same components connected in parallel.

2. Draw a simple schematic of three resistors connected in parallel to a 12V battery. $R_1 = 10\Omega$, $R_2 = 18\Omega$ and $R_3 = 25\Omega$.
   a) Compute the total resistance (R_p) (two decimal places).
   b) Compute the branch currents.
   c) What is the total current.
   Express all currents in amperes correct to three decimal places.

10 1.

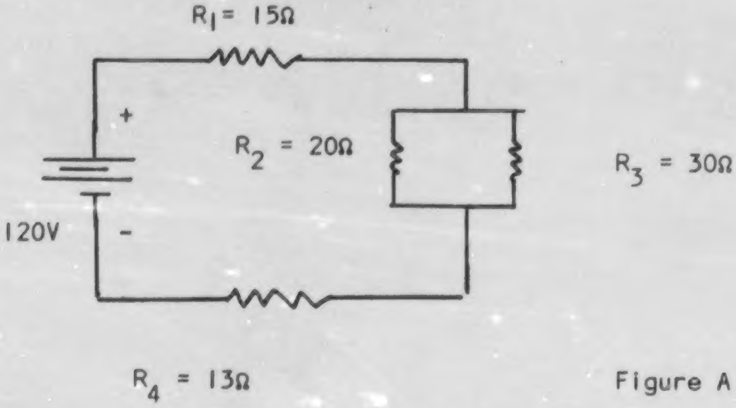


Figure A

For the circuit shown determine:
a) R_p (this is the equivalent of R_2 and R_3 in parallel).
b) R_t (total resistance)
c) Line current
d) VR_1
e) VR_2
f) I_3
g) I_4
h) VR_3

2.

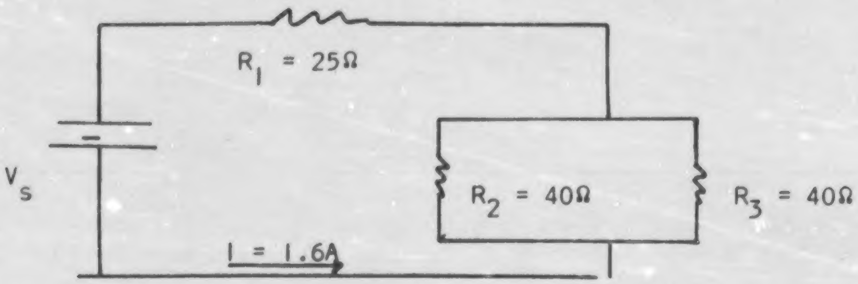


Figure B

Calculate the source voltage, V_s, in the circuit shown, if the line current is 1.6A.

II 1. Refer to Figure A. Calculate the power dissipated by R_4 and the total power dissipation of the circuit. (Correct to two decimal places.)

2. Refer to Figure B. Calculate P_1 and P_3, correct to two decimal places.

Challenge

1.

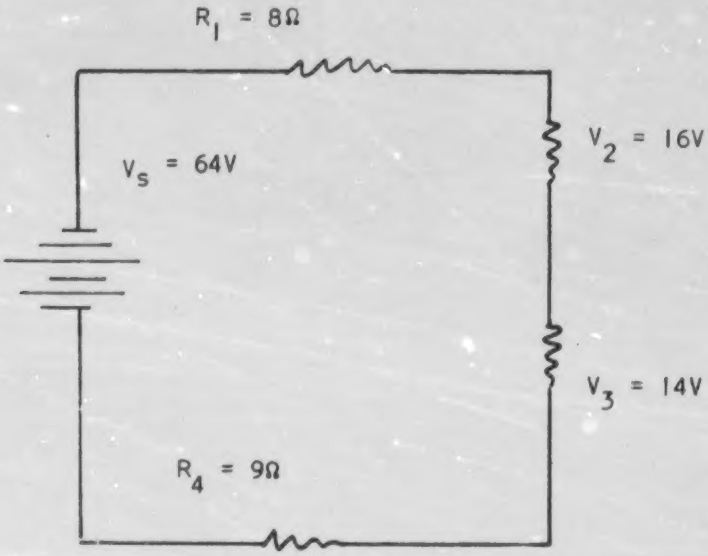


Figure C

Determine:
a) R_2
b) V_4
c) I_t
d) V_1
e) R_3
f) R_t
g) I_2
h) Total power dissipation.

2. Challenge

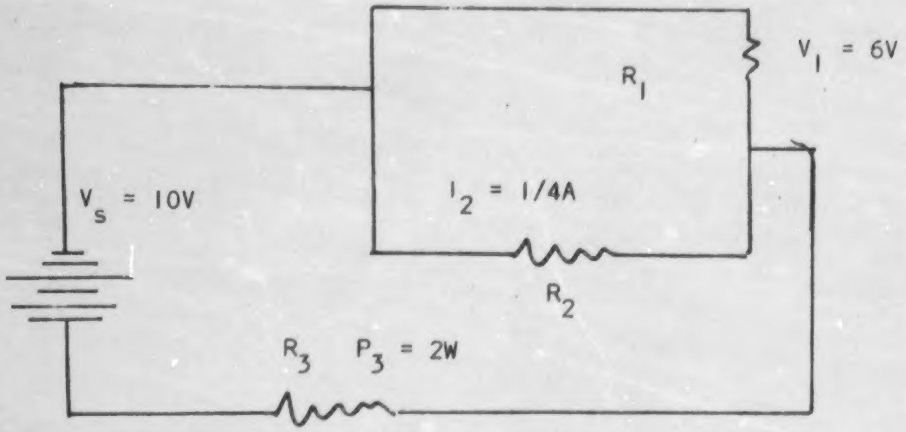


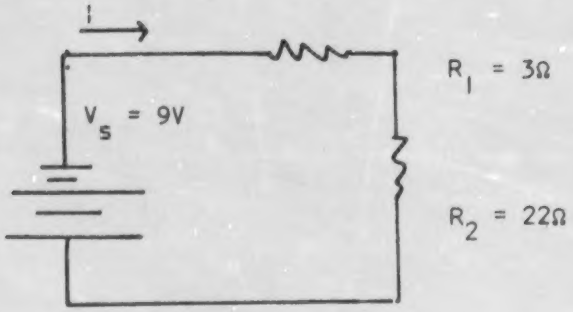
Figure D

Determine:

a) R_1
b) I_1
c) R_2
d) I_t
e) R_3
f) V_2

Answer Key

1-3 1.



2. Voltage - electromotive force
   difference in electrical potential
   Resistance - opposition to current flow
   Current - the flow or transfer of electric charge in a conductor.

3. Volt V
   Ohm Ω
   Ampere A

4-6 1. 325Ω
2. a) $I = E/R = 15/325 = 0.046A = 46$ mA
3. $E = IR$; $V_s = 2.35 \times 15.5 = 36.4V$
4. The solution here is derived by equivalent ratios--the current has not been calculated.

$\frac{R_1}{R_2} = \frac{V_1}{V_s}$ and $V_1 = \frac{R_1}{R_t}(V_s)$ and

$V_2 = \frac{R_2}{R_2}(V_s)$; therefore

$V_1 = 800/2730 \times 13.65 = 4.0V$

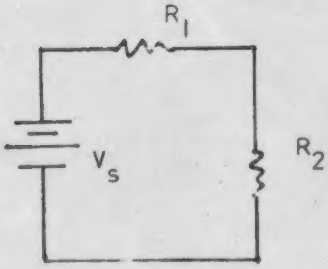
$V_2 = 1450/2730 \times 13.65 = 7.25$ V

$V_3 = 480/2730 \times 13.65 = 2.4V$

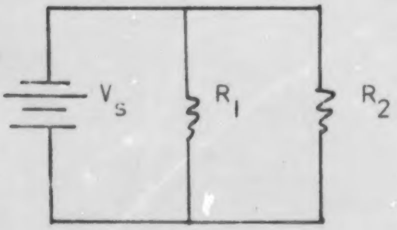
Check: Total = 13.65V

7 1. By Kirchoff's voltage law: $VR_2 = 10 - 6.35 = 3.65V$

8,9 1.

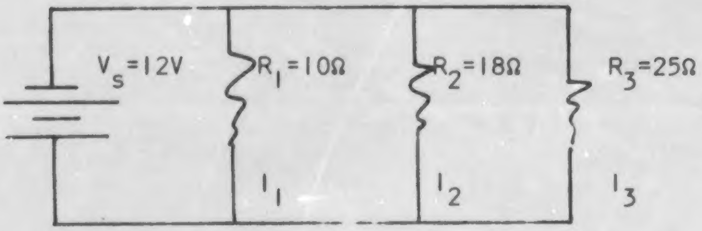


Series



Parallel

2.



a) $R_t = R_p = 1/10 + 1/18 + 1/25 = 5.11\Omega$

b) $I_1 = 12/10 = 1.200A$
$I_2 = 12/18 = 0.667A$
$I_3 = 12/25 = 0.480A$

c) $I_t = 2.347A$

10 1. $R_p = 12\Omega$
$R_t = 40\Omega$
$I_t = 3A$
$VR_1 = 45V$
$VR_4 = 39V$
$VR_2 = VR_3 = 120 - (45 + 39) = 120 - 84 = 36V$
$I_3 = 1.2A$
$I_4 = 3A$

2. $R_p = 20\Omega$
$R_t = 45\Omega$
$V_s = 45 \times 1.6 = 72V$

11 1. $P_4 = 117W$; $P_t = 360W$
2. $P_1 = 64W$; $P_3 = 25.6W$

Challenge: Note the order of the answers.

$I_t = I_2 = 34/17 = 2A$
$R_2 = 16/2 = 8\Omega$
$V_4 = 18V$
$V_1 = 16V$
$R_3 = 7\Omega$
$R_t = 32\Omega$
$P_t = 128W$

Challenge: Note the order of the answers.

$V_2 = V_1 = 6V$ (parallel)
$V_3 = 10 - 6 = 4V$
$I_t = I_3 = P_3/V_3 = 2/4 = 1/2\ A$
$I_1 = 1/2 - 1/4 = 1/4\ A = I_2$
$R_3 = 8\Omega$
$R_1 = R_2 = 6/1/4 = 24V$

OP.VII. PROBLEM-SOLVING STRATEGIES (1 module)

Although the problems in these exercises are of a mathematical or puzzle nature, the strategies and techniques used to solve them can frequently be applied to solving problems encountered outside the classroom.

The emphasis in this unit is on applying problem-solving strategies rather than on a solution.

Some problem-solving strategies or techniques that may be used:

A. Read the problem carefully.
B. Construct a table, chart or graph.
C. Search for a pattern.
D. Solve a simpler, similar problem.
E. Guess the answer, check, and revise if necessary.
F. Change your point of view.

A. Read the Problem Carefully

Problems sometimes present difficulties because the reader misunderstands or misreads the question. Sometimes the problem may also contain information that is unnecessary for a solution of the problem.

Read each of the following problems critically and then answer the questions. If you do not know the answer you may reread the problem. If the problem does not contain the answer to the question, write "No Information Given."

1. Beggi Kristjansson arrived at the fish packing plant at 7:00 a.m. to find a previous worker had filleted 9 cases of fish. If Beggi filleted 1.2 cases of fish per hour, how many cases of fish had he filleted by 5 p.m.?

    a) How many cases of fish did Beggi fillet in one hour?

    b) How many hours did Beggi work?

    c) Did Beggi take time off for lunch or coffee breaks?

    d) Were the fish pickerel or Red River halibut?

    e) Was the fish packing plant in Gimli?

    f) Are the 9 cases of fish filleted by a previous worker necessary to solve the problem?

2. Randy Hogar had 43 Chinchilla rabbits. All but 9 died. How many rabbits remained alive?

   a) What kind of rabbits did Randy have?

   b) How many of the rabbits were bucks and how many were does?

   c) How many rabbits died?

   d) How many rabbits did not die?

   e) How many rabbits remained alive?

3. Here is a strange problem. Did you know that a man living in Manitoba, Canada, can not be buried across the border in Minnesota, U.S.A.? Why not?

   a) Does the problem state which law would be violated by the burial?

   b) Does the same restriction apply to females?

   c) Where is the man living?

   d) Where can he not be buried?

   e) Should anyone living be buried?

4. How much can you save on each can if you buy 1 dozen cans of peas for $21.60 instead of $2.00 a can?

   a) What is the price of 12 cans of corn bought in individual cans?

   b) Are you asked how much you can save?

   c) Is the answer to the problem $2.40?

   d) Incidentally, $2.40 is not the correct answer. Why not?

5. Cover up the numbers at the right except for the top number. Expose the numbers one at a time and add each new number exposed to the total of the previous numbers.

   a) What is the sum of the eight numbers?

   b) Try this question on ten friends who have not seen this question previously. Record their answers.

   c) Why do some people get a total of 5000?

1000
10
1000
20
1000
30
1000
40

6. Bruce was asked to divide 50 by 1/2 and add 3. Without any hesitation, he stated 28.

   a) Is Bruce correct?

   b) What answer do you get with the calculator?

   c) Why did Bruce make an error?

B. Construct a Table, Chart, or Graph

Diagrams frequently help clarify a problem. Construct a diagram, chart, or graph for each of the following problems. Do not solve any of these problems.

1. A phonograph has a radius of 15 cm. The unused center portion (label) has a radius of 5 cm.

2. A cylindrical gasoline tank is to have its side and ends painted at a cost of \$3.25/m^2. If the radius of the tank is 2 m and its height is 10 m, find the cost of painting the tank.

3. In tossing three coins, how many ways can they land? Use H for heads and T for tails.

4. In the Ben Hur Suicide Chariot Race, Gaius is 1 length behind Claudius; Gaius is two lengths ahead of Julius; Augustus is one length ahead of Ben; and Ben is three lengths ahead of Julius. Who is in the lead?

5. An explorer at the North Pole walks 1.6 km south, 15 km east, and 1.2 km north. How far is he from his starting point?

6. A kite is at the end of a 240 m string. The string makes an angle of 45° with the ground. Assuming that the ground is level, how high above the ground is the kite?

C. Search for a Pattern

One successful problem-solving strategy is to search for a pattern within the data given or developed from the information in the problem.

1. Determine the pattern and fill in the missing number.

   a) 2, 4, 6, 8 ___

   b) 1, 4, 9, 16 ___

   c) 1, 3, 2, 5, 3, 7, 4 ___

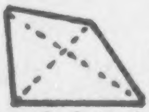
   d) 1, 3, 7, 15 ___

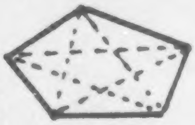
   e) 4, 6, 9, 13 ___

2. Complete the table which provides the answers to the number of diagonals in polygons of various shapes.

# of sides	3	4	5	6	7	8	9	10
# of diagonals	0	2	5	9				

triangle


quadrilateral


pentagon

D. Solve a Simpler, Similar Problem

Occasionally a problem appears difficult because of the numbers involved. It is difficult to see what mathematical operation should be used. By changing the numbers and simplifying the problem the operation required may become self-evident.

Rewrite the following problems using simpler statements and then show how the original problem should be solved.

1. Last year 1 943 268 vehicles, carrying 2 714 982 passengers passed a traffic counter on Highway #75. Calculate the average number of passengers per vehicle.

   e.g. Suppose 10 vehicles carried 20 passengers. The obvious answer is 2 obtained by dividing 20 by 10 or dividing the number of passengers by the number of vehicles.

   Therefore, the solution to the original question would be obtained as follows: 2 714 982 - 1 943 268.

2. Mrs. Robinson had $14 328.50 in her bank account. She withdrew 7/15 of it and gave it to her only neice. At the same time she withdrew 17/40 of the original amount and spent it on a trip to Europe. How much did she have left in the bank?

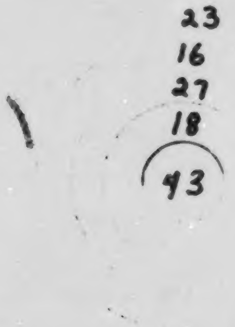
3. The inventor of the game of chess asked as a reward that one grain of wheat be placed on the first square of the chess board, two grains on the second, four grains on the third, etc., so that each square would have twice as many grains as the square before. If these grains of wheat had been beans there would have been a total of 18 450 000 000 000 000 000 beans and if a Volkswagen station wagon can contain 1 612 462 beans, how many station wagon loads of beans would the inventor have received?

E. Guess at the Answer, Check, and Revise if Necessary

There is nothing wrong with guessing at the answer, if after guessing the problem solver checks to see if the solution is correct and refines the guess if the answer is not correct.

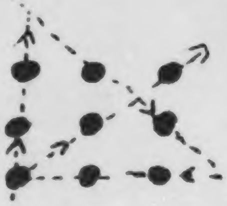
1. A young restaurant owner has discovered that with 18 tables in a large room, whe nets $15 a day per table. When she increased the number of tables by one, she nets $.50 less per table. Assuming that each additional table decreases the profit by $.50 per table, how many additional tables should she place in the room to obtain the maximum possible profit?

2. Robin was practicing his archery on the target shown in the diagram. With six arrows, he scored exactly 100 points. Where did the arrows land?



F. Change Your Point of View

Sometimes our minds are set when looking at a problem. Given a three by three set of dots and then asked to join them with 4 line segments, many of us believe our segments must remain within the rectangle. We do not think of the possibility of moving outside the set of dots.

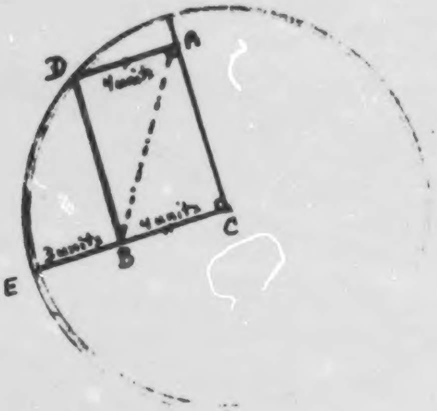


1. Suggest possible ways in which you could turn off your bedroom light and get into bed before the room is dark. The light switch is 3 metres from the bed.

2. In what order are the following numbers arranged?

   88, 51, 14, 9, 17, 29, 0

3. In the diagram, C is the center of the circle. Figure ACBD is a rectangle. How far is it from A to B?



PROBLEMS!?!

In attempting to solve the problems in this exercise, concentrate on strategies you are using. Identify the strategies you applied even if a strategy does not lead to a solution.

1. A cheetah and a young antelope sight each other at the same instant. The two animals are 240 m apart. The antelope bounds away at 20 m/sec. while the cheetah races at 32 m/sec. How long will it take for the cheetah to catch up with the antelope? Can you solve this problem using four different problem-solving techniques?

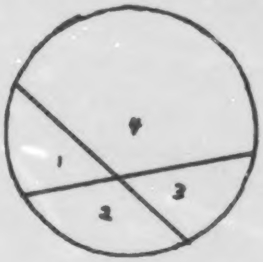
2. Two frogs have a practice race prior to the Annual Frog Follies at St. Pierre. The course is 1350 cm long one way and they race there and back for a total distance of 2700 cm. Both begin at the same instant. The longer legged Leopard frog covers 180 cm per jump while the smaller one covers 90 cm per jump. However, the smaller frog takes two jumps for every jump of the larger one and manages to stay even with her opponent. One of them is clearly the winner. Which one? Can you explain how this is possible?

3. How many different squares are there in an 8 by 8 grid?

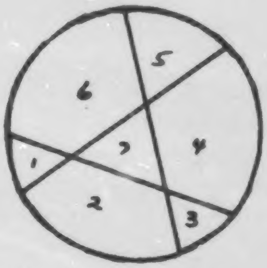
4. Abdul Kazan, the Grand Vizier of an ancient Arab Sheikdom believed that every man should have more than one wife. In order to increase the number of women in relation to men, he decreed that every woman must desist from having any more children after the birth of the first son. He reasoned that some women would have four or five daughters before they had a son and this would quickly result in a majority of females in the population of his country. Was his plan a success? Remember that there is a 50-50 chance of having a boy baby at any birth. Select a random sample of ten mothers and set up a chart to show the distribution of births.

5. Young Abie Friesen moved to Southern Manitoba and soon became addicted to sunflower seeds. In five days he ate a total of 80 packages of seeds. Each day he ate seven packages more than the day before. How many packages did he consume the first day?

6. If a pie were cut with straight cuts, with each cut intersecting the previous cuts once, and no three cuts intersected at the same point, how many pieces of pie would result from 10 such cuts?



2cuts — 4pieces



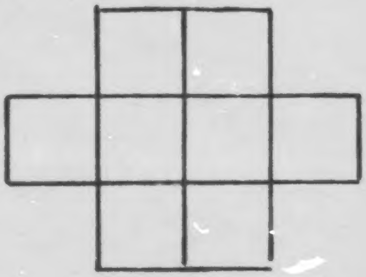
3cuts — 7pieces

7. A snail at the bottom of a 130 cm hole climbs up 40 cm each day and slides back 30 cm each night. How long will it take the snail to get out of the hole?

8. The tide is rising at the rate of 36 cm per hour. The rungs of a rope ladder hung over the edge of the ship are 3 cm thick with 33 cm between rungs. How many rungs of the ladder will be submerged in 4.5 hours if 3 rungs were under water when the tide began to rise?

9. At the opening ceremonies of a two day invitational volleyball tournament the nine captains are introduced. If each were to shake hands with all the others, how many handshakes?

10. Fill the squares in the diagram with the numerals 1, 2, 3, 4, 5, 6, 7, 8 so that no consecutive numbers are adjacent either vertically, horizontally or diagonally.



11. An old math professor left her seventeen prized Math Puzzle books to her three favourite students. She had stated in her will that half the books should go to James, one-third of the books to Sally, and one-ninth to Leslie.

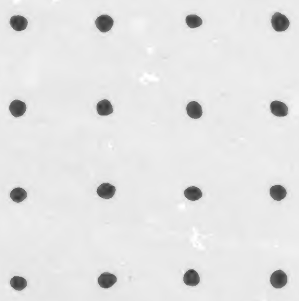
    These students were sharp enough to know that you can not divide 17 books into halves or thirds or ninths. The students, therefore, borrowed a Physics book so that the total books would be 18. Since half of 18 is 9, and one third of 18 is 6, and one-ninth of 18 is 2, and since 9 + 6 + 2 is 17, each student received his or her share with the Physics book remaining. The Physics book was returned to the lab and everyone was satisfied. But something is wrong somewhere; can you find the error?

12. Tanis, Pam and Edith competed in the Provincial Track Meet. Edith did not come in second and Pam did not come in third. Edith's time was two seconds faster than that of the oldest girl in the 400 metre event. In what order did the girls finish the race? Mark an X in the box for statements that cannot be true.

	First	Second	Third
Tanis			
Pam			
Edith			

13. In Jack's back yard is a cherry tree which has three boughs. Each bough has fine limbs; each limb has eight branches; each branch has eleven flowers. If ten of eleven flowers bear a fruit, how many apples will there be on the tree?

14. Without lifting your pencil from the paper, draw six line segments that will pass through all 16 points.



15. Two aeroplanes leave Threehorne Airport travelling in opposite directions. One travels at 172 km/h while the other travels 225 km/h. How far apart are the two planes after three hours.

16. Farmer Jake has 4 1/2 stacks of hay in one field and 2 1/2 stacks of hay in another field. If he puts all the hay together, how many stacks will he have?

17. One Sunday afternoon a farmer flies his Cessna airplane 6 km N, 4 km E, 9 km N, and 4 km E. How far is he from his starting point?

18. There are only two rectangles whose sides are whole numbers and whose area and perimeter are the same number. What are their dimensions (A = lxw and P = 2l + 2w).

19. A phonograph has a diameter of 30 cm. The unused center portion (label) has a diameter of 10 cm. If there are 8 grooves per centimetre, how far does the needle travel during the playing of the record?

20. The distance travelled is directly proportional to the time. If you travel 670 km in 8 hours, how long will it take to travel 1120 km?

Answer Key

A. 1. a) 1.2 cases
   - b) questionable, 7 a.m. to 5 p.m.?
   - c) no information given
   - d) no information given (Red River halibut is catfish in New Orleans)
   - e) no information given
   - f) no

2. a) chinchilla
   - b) no information given
   - c) all except 9
   - d) 9
   - e) 9

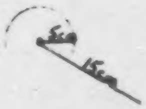
3. a) no information given
   - b) no information given
   - c) Manitoba, Canada
   - d) Minnesota, U.S.A.
   - e) no one living should be buried

4. a) 24.00
   - b) yes
   - c) no
   - d) 2.40 is the savings per dozen. The question asks "How much can you save on each can?"

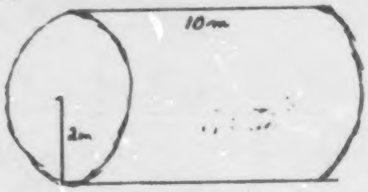
5. Many people will answer 5000 when the correct answer is 4100.

6. a) no
   - b) 103
   - c) Bruce misunderstood the question

B. 1.

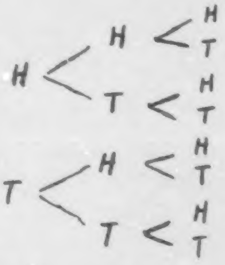


2.



Cost 3.25/m²

3.



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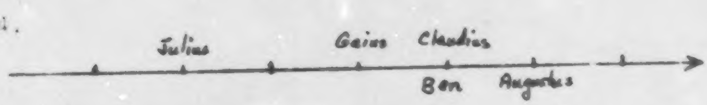

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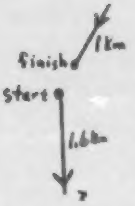
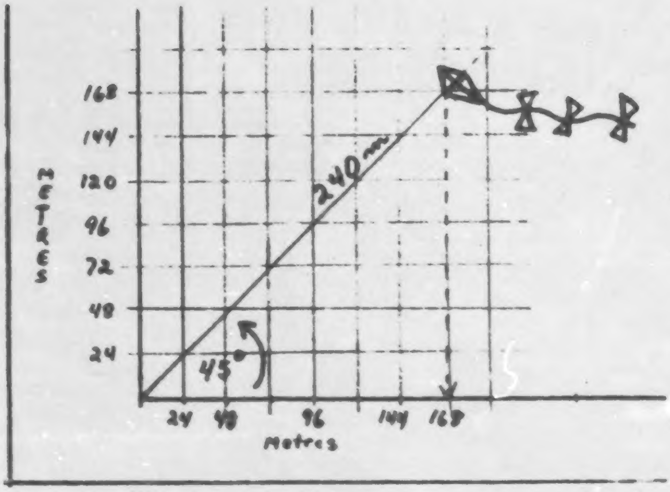


6.



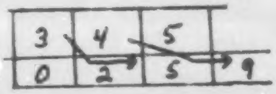
C. 1. a) add 2; 10
b) squares of natural numbers; $5^2 = 25$
c) two series 1, 2, 3, 4 and 3, 5, 7; 9
d) double and add one; 31
e) +2, +3, +4, +5; 18

2.

sides	3	4	5	6	7	8	9	10	
diagonals	0	2	5	9	14	20	27	35	

Pattern bottom row add 2, add 3, add 4, add 5, etc.

or



3 + 2 = 5   4 + 5 = 9, etc.

D 1. Solution = 1.397

2. Solution - $1552.25

Strategy: Write a simpler similar problem.

e.g. a) Mrs. Robinson had $400 in the bank.
She gave 1/10 to her neice.
She spent 3/10
How much did she have left?
400 - (400 x 1/10) + (400 x 3/10) =

or b) 1/10 + 3/10 = 4/10, so she must have 6/10 remaining.

Solution to original problem.

a) 14 328.50 - (14 328.50 ^ 7/15) - (14 328.50 - 17/40) =
14 328.50 - (14 328.50 x .46) - (14 328.50 - .425) =

b) Withdrew or spent 7/15 + 17/40 = .46 + .425 = 0.8916
Amount spent 14 328.50 x 0.8916 = $12 776.25
Amount remaining 14 328.50 - 12 776.25 = 1552.25

3. Solution - 1 144 213 011 000

Strategy: Write a simpler, similar problem.

1 box can hold 4 beans
How many boxes would be required for 8 beans
Solution is 2 boxes obtained by dividing the total number of beans by the number of beans in one box.
Solution to original problem: Total Number of beans ÷ Number of beans in a VW

$$\frac{18\ 450\ 000\ 000\ 000\ 000\ 000}{1\ 612\ 462} = 1\ 144\ 213\ 011\ 000$$

E. 1. Guess at, say, 20 tables and 21 tables and see if total profit is increasing. Try 23 tables, 24 tables and 25 tables. Keeping record of the trials and resulting answers could be written in table form.

Number of Tables	Profit Per Table	Total Profit
18	15	$270
20	14	280
22	13	286
24	12	288 *
26	11	286
28	10	280

2. To obtain a score of one hundred the sum of the unit digits of six numbers must end in a zero. Through trial and error, the arrows will be found in the sections 16, 16, 16, 16, 18, 18.

F. 1. a) shoot out the light
   b) get a 4 metre pole
   c) throw a pillot against the wall above the switch and let the pillow turn off the light as it slides down the wall
   d) switch off the light during daylight, get into bed and wait for darkness to come

2. If the numbers were written out in words, they would be in alphabetical order.

3. The distance AB is a diagonal of a rectangle.
   DC would also be a diagonal and equal in length to AB
   DC is also a radius of the circle
   EC is a radius of the circle
   EC is 7 units in length, so is DC and AB

Answers to Problems

1. The cheetah and the antelope - 20 seconds
   There are at least four different strategies that could be used to solve this problem.

   Strategy: Guess at the answer and revise if necessary.

   10 seconds? Antelope 240 + 10(20) = 440 metres
   Cheetah 0 + 10(32) = 320 metres (cheetan behind)

   15 seconds? Antelope 240 + 15(20) = 540 metres
   Cheetah 0 + 15(32) = 480 metres (catching up)

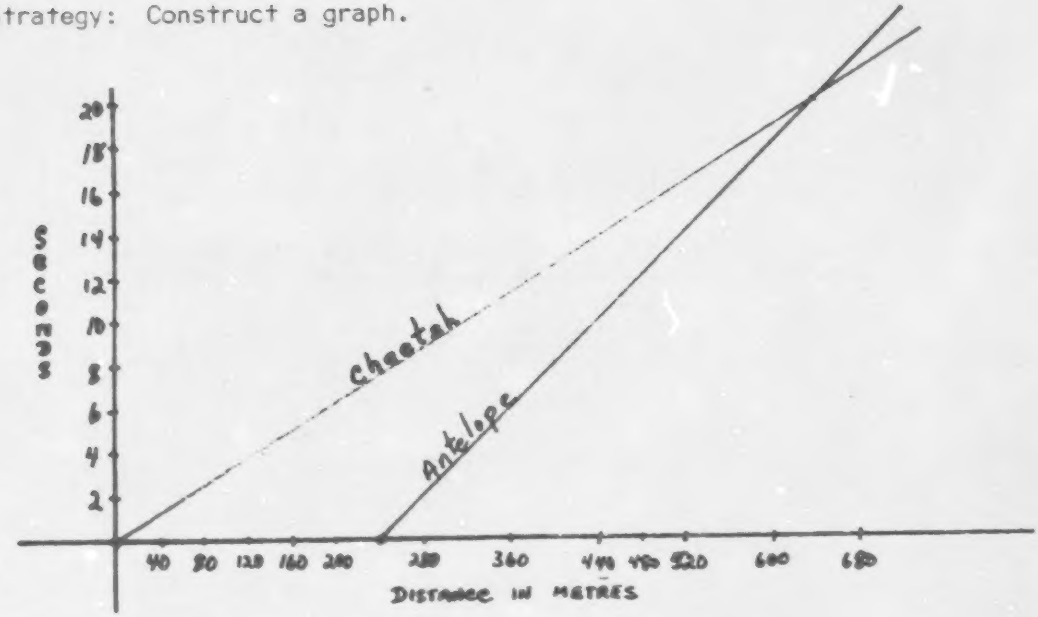
   20 seconds? Antelope 240 + 20(20) = 640 metres
   Cheetah 0 + 20(32) = 640 metres (got him!)

   Strategy: Table

# of seconds	0	4	8	12	16	20	24		
Distance, Antelope	240	320	400	480	560	640			
Distance, Cheetah	0	128	256	384	512	640			

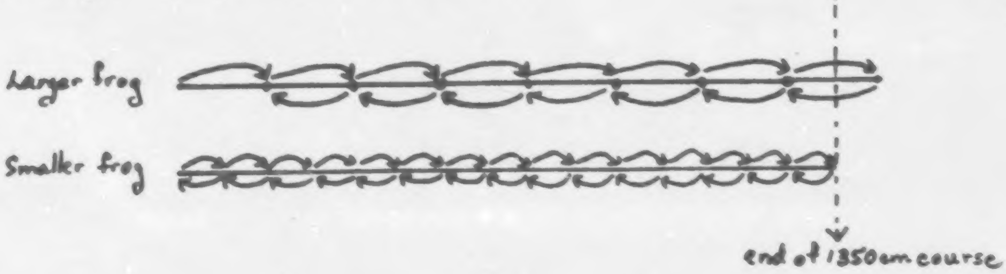
   Strategy: Algebraic Equation
   Let n = number of seconds to catch up
   $n \times 20 + 240 = n \times 32$; $n = 20$ seconds

Strategy: Construct a graph.



2. Frog Follies - the smaller frog wins.

Strategy: Draw a diagram to scale



After fifteen jumps the larger frog is 180 cm from the finish line, while the smaller frog gets the checkered flag. The larger frog, because of his longer leaps, landed 90 cm beyond the turn around point, and therefore lost time.

Strategy: Mathematics
1350 - 180 = 7.5 jumps
1350 - 90 = 15 jumps
Since the larger frog cannot arrest his leap in mid-air at the turn around point, he falls behind the smaller frog.

3. Different squares - 204

Strategy: Set up a table and search for a pattern.

GRID	1×1	2×2	3×3	4×4	5×5	6×6	7×7	8×8	Total
1 × 1	1								1
2 × 2	4	1							5
3 × 3	9	4	1						14
4 × 4	16	9	4	1					30
5 × 5	25	16	9	4	1				55
6 × 6	36	25	16	9	4	1			
7 × 7	49	36	25	16	9	4	1		
8 × 8	64	49	36	25	16	9	4	1	204

Counting the different squares for a 1 x 1, 2 x 2, 3 x 3 is not too difficult. By then the pattern is obvious. Notice the squares of natural numbers.

4. The Grand Vizier - loses!

Strategy: Set up a diagram to illustrate the possible births.

Mother	children			
#1	B	-	-	-
#2	G	B	-	-
#3	B	-	-	-
#4	G	G	B	-
#5	B	-	-	-
#6	G	B	-	-
#7	B	-	-	-
#8	G	G	G	B
#9	B	-	-	-
#10	G	B	-	-
Totals	5B 5G	3B 2G	1B 1G	1B 0G

The Grand Vizier's experiment was a failure since each generation of children had an even split between boys and girls. The Vizier was consequently beheaded.

5. Sunflower Seeds - 2 pkgs. on Day 1

Strategy: Recognize a pattern.
Let x = number of packages on Day 1
Then x + 7 is the number of packes on Day 2, x + 7 + 7 on Day 3, etc.
x + (x + &) + (x + 14) + (x + 21) + (x + 28) = 80
x = 2 packages on Day 1

Strategy: Logic
If 80 pkgs. in 5 days, then 80 ÷ 16 pkgs. on the middle day. Taking the differences of 7 into account the series is 2, 9, 16, 23, 30 with 2 pkgs. on the first day.

6. Pieces of Pie - 56 pieces

Strategy: Tabulate the results of up to 4 cuts and search for a pattern.

# of cuts	# of pieces
0	1
1	2
2	4
3	7
4	11
5	
6	
7	
8	
9	
10	56

OR

# of cuts	Pattern	# of pieces
0	1	1
1	1+1	2
2	1+1+2	4
3	1+(1+2+3)	7
4	1+(1+2+3+4)	11
5		16
6		22
7		29
8		37
9		46
10	1+(1+2+3 . . . 9+10)	56

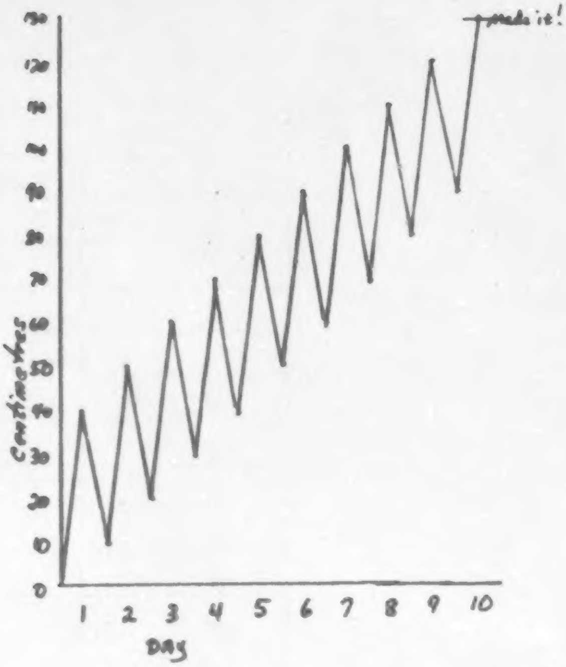
Or consider the number of additional pieces.

0 cuts —— 1 piece
1 cut —— 1 additional piece
2 cuts —— 2 additional pieces
3 cuts —— 3 additional pieces
∴10 cuts —— (1 + 1 + 2 + 3 . . . + 10) pieces

7. The Snail - Solution: 10th day

Strategy: Draw a diagram

The answer is not 13 days. On the tenth day the snail reaches the top of the hole and does not slide back.



8. The Rising Tide

Solution: 3 rungs submerged
Strategy: Draw a picture, build a model.
In sketching a diagram the problem solver may come to realize that the ship floats and rises with the tide.

9. Handshakers - 36

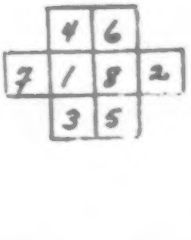
Strategy: Re-enact the situation (could draw nine dots) and look for a pattern. Have one captain shake the hands of the other 8, and leave the court. The next captain shakes hands with the 7 remaining captains and leaves. Hence, 8 + 7 + 6 + 5 + 4 + 3 + 2 + 1 = 36 handshakes.

10. Fill the Squares

Strategy: Guesswork.

Strategy: Simple reasoning.

The numbers 1 and 8 can form only one pair of consecutive numbers while 2, 3, 4, 5, 6, and 7 can each form two pairs of consecutive numbers. Therefore, 1 and 8 must be in the center squares. After writing the 1 in one of the center boxes only one box is not adjacent, vertically, horizontally or diagonally to the box containing the numeral 1. This box would contain the numeral 2. The numeral 7 has only one possible location, the only box not adjacent to 8.



11. The Maths Professor

Strategy: Careful reading.

Solution: The one-half, the one-third and the one-ninth add up to seventeen-eighteenths or 0.94. The professor therefore did not will all of her books.

12. Provincial Meet

Strategy: Complete a chart.

	FIRST	SECOND	THIRD
TANIS	⑤ X	⑦ X	⑧ ✓
PAM	④ X	⑥ ✓	② X
EDITH	③ ✓	① X	

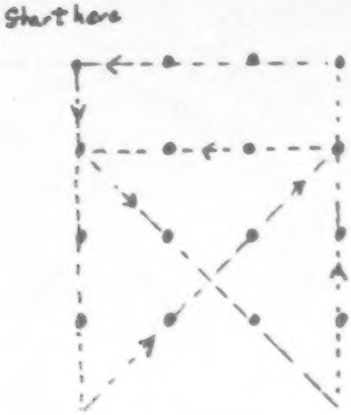
1. Edith did not come in second - mark x
2. Pam did not come in third
3. Since Edith came in 2 seconds faster than someone else, she couldn't have been last and since she wasn't second, Edith must be first.
4. If Edith was first, Pan couldn't be first.
5. Since Edith was first, Tanis couldn't be first.
6. Since Pan wasn't first or third she must have been second.
7. Therefore Tanis couldn't be second.
8. And hence, Tanis was third.

13. Cherry/Apply Tree?

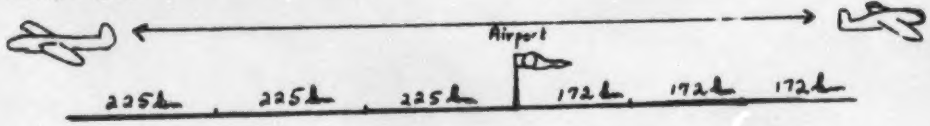
Solution: No apples
Strategy: Careful reading

Since this was a cherry tree how could it bear apples?

14.



15. Airplanes

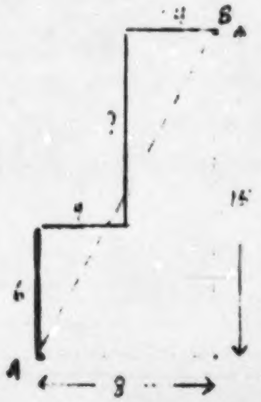


Strategy: Construct a diagram.
Solution: 225 x 3 + 172 x 3 = 1191 km

16. Solution: If all the hay were put together you would have 1 large stack. But how did he get the half stacks?

17. Solution: 17 km

Strategy: Construct a scale drawing on a grid.
Measure the distance AB



Strategy: Mathematics

$$a^2 + b^2 = c^2$$

$$8^2 + 15^2 = c^2$$

$$c = 17$$

18. Solution: 6 x 3 and 4 x 4

Strategy: Construct a table. Hold width constant, vary the length, and look for a pattern.

Length	Width	Perimeter	Area
1	1	4	1
2	1	6	2
3	1	8	3
4	1	10	4

Increasing the length by 1 unit increased the difference between perimeter and area by 1 unit.

Length	Width	Perimeter	Area
2	2	8	4
3	2	10	6
4	2	12	8
5	2	14	10

The difference between the perimeter and area is a constant 4.

Length	Width	Perimeter	Area	
3	3	12	9	
4	3	14	12	
5	3	16	15	
6	3	18	18	*

The difference between the perimeter and area initially is 3 and decreases as length increases. There will be a solution here.

Length	Width	Perimeter	Area	
4	4	16	16	*
5	4	18	20	
6	4	20	24	
7	4	22	28	

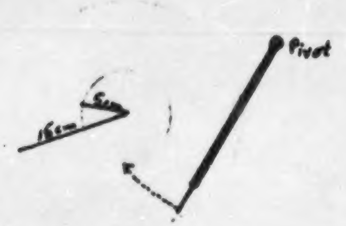
Solution here at 4 x 4.

Another solution method

2 l x 2 w = lw
Set w at 1,2,3,4, etc. and determine l.

19. Solution: 10 cm

Strategy: Sketch the problem and answer becomes evident.



The needle, attached to an arm, pivots from the outer rim of the record to the label, a distance of 10 cm.

20. Solution: ≐ 13.37 hr. or 13 hr. 22 min.

Strategy: Rewrite the problem in simpler terms.

If you travel 10 km in 5 hrs. how long will it take to travel 30 km.

The speed of the vehicle is 10 ÷ 5 or 2 km/hr. obtained by dividing km by the number of hours.

If you travel 2 km/hr. then it would require 15 hrs. to travel 30 km obtained by dividing the second distance by the speed.

Solution to original problem km/h = 670/8 = 83.75 km/h

$$\frac{\text{second distance}}{\text{speed}} = \frac{1120}{83.75} \doteq 13.37 \text{ hrs.}$$

Strategy: Ratio and proportion (algebraic pattern)

670/8 = 1120/x

x = 13.37 hrs.

OP.IX. PROBABILITY (1/2 module)

Note: Although the topic "odds" is the last objective, many of these problems use the concept. Teachers could explain the term early in the module or delete reference to "odds" in the first exercises.

A. 1. Give five examples of the use of probability in our everyday lives.

2. Define the term "probability."

3. Determine the probability for each of the following:
   - a) the roll of a die will produce an odd number;
   - b) the roll of a die will produce a five;
   - c) that a roll of the die will produce an 8;
   - d) picking a blue marble from a jar containing 5 green marbles and 2 blue ones;
   - e) picking a green marble from a jar containing 5 green marbles and 2 blue ones;
   - f) the roll of a die will produce a number less than 5;
   - g) of picking a $10 bill out of a bag containing four $1 bills and eight $10 bills.

4. A circle is divided in 5 equal segments. Two segments are white, two are black, and one is red. If a spinner is attached, what is the probability of each of the following (discount spins which stop on a line):
   - a) P(black)
   - b) P(white)
   - c) P(red)
   - d) P(red or white)
   - e) P(white or black or red)
   - f) P(brown)

5. A bubblegum machine contains 10 blue, 5 white, 5 red, 2 orange, and 3 brown pieces.
   - a) For the first piece taken, determine:
     - 1) P(blue)
     - 2) P(red)
     - 3) P(orange)
     - 4) P(brown)
     - 5) P(green)
     - 6) P(yellow)
     - 7) P(blue or white or red or orange or brown)

   - b) If the first one picked is red and it is not replaced in the machine, determine:
     - 1) P(blue)
     - 2) P(red)
     - 3) P(orange)
     - 4) P(brown)
     - 5) P(black)

c) If the first is blue and the second red, for the third determine:
   1) P(blue)
   2) P(red)
   3) P(orange)
   4) P(brown)
   5) P(yellow)

6. Using a regulation deck of 52 playing cards, determine the probability for each of the following:
   a) pulling a black card;
   b) pulling an ace;
   c) pulling a face card;
   d) pulling a club;
   e) pulling a card with face-value less than 6 (assume ace is low);
   f) pulling a card with face-value less than 13;
   g) pulling a card with face-value of zero.

7. a) Define the term "odds."
   b) Explain the difference between probability and odds.

8. Re-do questions 3-6 determining odds rather than probabilities.

9. a) A quarterback's passing average was given as 57%. What does this mean?
   b) A hitter's average was listed as 0.343. What does this mean?
   c) The odds for winning a certain lottery were given as 2:13. What does this mean?
   d) The odds on a football game were stated as "5 to 3 in favour of team A defeating team B." What does this mean.

10. a) If Harry hit safely 39 times out of 160 at bat, what is his batting average?
    b) Marian stole 9 bases out of 14 attempts. What is the probability, the odds, of her being thrown out at second on a steal attempt?
    c) Over a season's play, a team scored 17 power play goals in 62 attempts. What is the probability, the odds, of them scoring a goal on a power play?
    d) In basketball, Henrietta had a foul shooting percentage of 76%. What is the probability, the odds, of her missing her next shot?

11. There were 400 runners who started a marathon. 260 completed the race.
    a) What is the probability, the odds, of a given runner not completing the race?
    b) What is the probability, the odds, of a given runner completing the race?

12. A company needs 5 employees. If there are 29 applicants, what is the probability, the odds, of a person being hired?

13. A basketball team consists of four guards, five forwards, and three centers. What is the probability, the odds in favour, of the star of the team being:
    a) a guard?
    b) a forward?
    c) a center?
    d) not a forward?

14. What is the probability, the odds in favour of, a person's social insurance number ending in a 2, 4, or 6?

15. Use a mortality table to determine the following:
    a) a male child's probability and odds in favour of living to:
        1. age 30
        2. age 50
        3. age 70
        4. age 90

    b) a female child's probability of living to:
        1. age 15
        2. age 35
        3. age 55
        4. age 75

    c) the odds against a man of age 40 still being alive at age 60.

    d) of 1200 females aged 30, the number that will reach the age of 65.

B. NOTE: The following experiments should be performed by several groups at the same time so that the results can be compared.

1. Experimentally, determine the probability of drawing an ace from a standard deck of 52 playing cards.

2. Experimentally, determine the probability of tossing two tails in a row with a single coin.

3. Experimentally, determine the probability of a paper cup landing right side up when dropped from one metre above the floor.

4. Experimentally, determine the probable number of thumb tacks landing point up if 10 tacks are dropped all at once out of a paper cup from a height of 15 centimetres onto a flat surface.

5. Determine the experimental probability of getting a sum of 6 in rolling a pair of dice.

6. Buffon's Needle - Take 100 straight pins (toothpicks or needles) of the same size and drop them randomly, one by one, on a sheet of paper that has been ruled so that the distance between the lines equals the length of the pin.
   a) count the number of pins that touch a line;
   b) estimate the probability that a needle will touch a line.

C

1. Draw a tree diagram showing the possible results for:
   a) one flip of a coin;
   b) one roll of a die;
   c) leaving a building which has four different exits (A,B,C, and D);
   d) choosing one hand from two hidden by a person behind his/her back;
   e) picking one pair of socks out of a drawer (containing one red pair, one green pair, and one navy pair) while it is dark.

2. Draw a tree diagram showing the possible results for:
   a) flipping a coin twice;
   b) flipping a coin and then rolling a die;
   c) rolling a die twice;
   d) drawing two cards, one at a time, out of a box; the box contains an ace, a king, and a queen;
   e) picking two marbles, one at a time, out of a sack; the sack contains one red, one blue, one green, and one brown marble;
   f) the birth of two children (not twins) in the same family.

3. Using the tree diagram from question #2, determine:
   a) the probability of getting two heads if a coin is flipped twice;
   b) the probability of getting one head and one tail if a coin is flipped twice;
   c) the odds against getting a sum ≤ 4 when a die is rolled twice;
   d) the probability of getting a sum ≤ 12 when a die is rolled twice;
   e) the odds in favour of pulling an ace, then a queen, out of the box;
   f) the odds in favour of the first child being a girl with the second one a boy;
   g) the probability of not pulling a brown marble and then a blue one out of the sack;
   h) the probability of getting a sum > 12 when rolling a die twice;
   i) the odds against the two children both being the same sex;
   j) the probability of pulling a king, then a jack, out of the box.

D

1. Using the Monte Carlo method, determine the probability of Angel's Foot coming first and Hot Stuff coming second in a 6-horse race.

2. A baseball player has a batting average of 0.400. Using the Monte Carlo method, determine experimentally how often this player might expect to get 3 hits in a game if he played 100 games in a season.

3. Two men enter a building having 6 entrances. Using the Monte Carlo method, determine the experimental probability of them all leaving by the same door.

4. A beach ball is thrown into a crowd of 10 people. Before it falls to the ground, it strikes three people. Use the Monte Carlo method to determine the probability of 3 given people being hit.

MORTALITY TABLE, CANADA, 1965-1967

Male

Age	Number Living	Number Dying	Age	Number Living	Number Dying
0	100 000	2 525	55	84 119	1 065
1	97 475	156	56	83 054	1 152
2	97 319	102	57	81 902	1 245
3	97 217	88	58	80 657	1 346
4	97 129	74	59	79 311	1 450
5	97 055	65	60	77 861	1 558
6	96 990	58	61	76 303	1 667
7	96 932	53	62	74 636	1 777
8	96 879	47	63	72 859	1 885
9	96 832	45	64	70 974	1 990
10	96 787	44	65	68 984	2 092
11	96 743	44	66	66 892	2 193
12	96 699	50	67	64 699	2 295
13	96 649	59	68	62 404	2 387
14	96 590	74	69	60 017	2 469
15	96 516	90	70	57 548	2 547
16	96 426	107	71	55 001	2 625
17	96 319	121	72	52 376	2 711
18	96 198	135	73	49 665	2 793
19	96 063	148	74	46 872	2 868
20	95 915	162	75	44 004	2 926
21	95 753	171	76	41 078	2 971
22	95 582	177	77	38 107	2 995
23	95 405	176	78	35 112	2 996
24	95 229	169	79	32 116	2 971
25	95 060	161	80	29 145	2 920
26	94 899	154	81	26 225	2 841
27	94 745	148	82	23 384	2 736
28	94 597	146	83	20 648	2 605
29	94 451	144	84	18 043	2 450
30	94 307	145	85	15 593	2 277
31	94 162	147	86	13 316	2 086
32	94 015	151	87	11 230	1 886
33	93 864	158	88	9 344	1 680
34	93 706	166	89	7 664	1 472
35	93 540	175	90	6 192	1 269
36	93 365	189	91	4 923	1 075
37	93 176	204	92	3 848	894
38	92 972	222	93	2 954	730
39	92 750	242	94	2 224	583
40	92 508	266	95	1 641	456
41	92 242	291	96	1 185	349
42	91 951	320	97	836	260
43	91 631	352	98	576	190
44	91 279	386	99	386	134
45	90 893	422	100	252	92
46	90 471	464	101	160	62
47	90 007	513	102	98	40
48	89 494	567	103	58	25
49	88 927	628	104	33	15
50	88 299	691	105	18	8
51	87 608	761	106	10	5
52	86 847	834	107	5	3
53	86 013	909	108	2	1
54	85 104	985	109	1	1

Female

Age	Number Living	Number Dying	Age	Number Living	Number Dying
0	100 000	2 008	55	90 568	587
1	97 992	130	56	89 981	635
2	97 862	86	57	89 346	689
3	97 776	68	58	88 657	748
4	97 708	61	59	87 909	808
5	97 647	53	60	87 101	875
6	97 594	46	61	86 226	946
7	97 548	38	62	85 280	1 027
8	97 510	34	63	84 253	1 113
9	97 476	31	64	83 140	1 199
10	97 445	29	65	81 941	1 294
11	97 416	28	66	80 647	1 396
12	97 388	30	67	79 251	1 509
13	97 358	32	68	77 742	1 627
14	97 326	35	69	76 115	1 742
15	97 291	41	70	74 373	1 865
16	97 250	44	71	72 508	2 004
17	97 206	48	72	70 504	2 167
18	97 158	51	73	68 337	2 341
19	97 107	51	74	65 996	2 515
20	97 056	52	75	63 481	2 694
21	97 004	53	76	60 787	2 877
22	96 951	54	77	57 910	3 064
23	96 897	56	78	54 846	3 241
24	96 841	56	79	51 605	3 397
25	96 785	57	80	48 208	3 528
26	96 728	59	81	44 680	3 632
27	96 669	62	82	41 048	3 707
28	96 607	64	83	37 341	3 737
29	96 543	69	84	33 604	3 717
30	96 474	74	85	29 887	3 645
31	96 400	79	86	26 242	3 523
32	96 321	85	87	22 719	3 354
33	96 236	92	88	19 365	3 136
34	96 144	98	89	16 229	2 876
35	96 046	106	90	13 353	2 583
36	95 940	115	91	10 770	2 272
37	95 825	125	92	8 498	1 950
38	95 700	136	93	6 548	1 633
39	95 564	148	94	4 915	1 329
40	95 416	162	95	3 586	1 049
41	95 254	177	96	2 537	801
42	95 077	194	97	1 736	592
43	94 883	213	98	1 144	420
44	94 670	233	99	724	286
45	94 437	255	100	438	185
46	94 182	280	101	253	115
47	93 902	306	102	138	67
48	93 596	333	103	71	37
49	93 263	362	104	34	19
50	92 901	394	105	15	9
51	92 507	428	106	6	4
52	92 079	464	107	2	1
53	91 615	503	108	1	1
54	91 112	544			

LIFE EXPECTANCY AT BIRTH FOR SELECTED COUNTRIES

This table shows the average life expectancy in years for infants of both sexes born from 1970 through 1975.

AFRICA		AFRICA (cont.)		ASIA (cont.)		NORTH AMERICA	
Algeria	53.6	Togo	41.0	Taiwan	70.2	Canada	72.2
Burundi	41.0	Tunisia	54.7	Thailand	62.0	Costa Rica	69.4
Cameroon	43.5	Uganda	50.0	Turkey	57.5	Cuba	69.0
Central African Republic	41.0	Upper Volta	37.3	Vietnam (North)	53.0	Dominican Republic	54.7
Chad	41.0	Zaire	43.5	Vietnam (South)	53.0	El Salvador	58.5
Congo	43.5	Zambia	46.0	**EUROPE**		Guatemala	54.1
Dahomey	41.0	**ASIA**		Albania	68.2	Haiti	47.5
Egypt	52.9	Afghanistan	40.5	Austria	71.3	Honduras	51.6
Ethiopia	41.0	Burma	50.5	Belgium	70.6	Jamaica	70.2
Ghana	48.5	Cambodia	53.0	Bulgaria	72.2	Mexico	64.6
Guinea	41.0	China	53.0	Czechoslovakia	71.4	Nicaragua	52.5
Ivory Coast	43.5	Hong Kong	71.8	Denmark	72.9	Panama	66.9
Kenya	50.0	India	51.8	Finland	69.0	Puerto Rico	72.5
Lesotho	46.0	Indonesia	48.1	France	73.5	Trinidad and Tobago	69.3
Liberia	43.5	Iran	53.0	Germany (East)	71.2	United States	70.6
Libya	55.1	Iraq	54.6	Germany (West)	71.3	**SOUTH AMERICA**	
Malagasy Republic	43.5	Israel	73.0	Great Britain	72.4	Argentina	68.2
Malawi	41.0	Japan	72.9	Greece	71.6	Bolivia	46.8
Mali	39.7	Jordan	55.2	Hungary	70.6	Brazil	63.1
Mauritius	65.8	Korea (North)	60.6	Ireland	73.0	Chile	63.6
Morocco	53.5	Korea (South)	60.6	Italy	72.8	Colombia	60.9
Niger	43.5	Laos	50.5	Netherlands	74.7	Ecuador	59.7
Nigeria	41.0	Malaysia	60.2	Norway	73.5	Guyana	67.2
Rhodesia	53.9	Mongolia	60.6	Poland	72.1	Paraguay	61.6
Rwanda	43.5	Nepal	43.6	Portugal	69.0	Peru	62.0
Senegal	43.5	Pakistan	50.4	Romania	71.4	Uruguay	70.1
Sierra Leone	43.5	Philippines	59.1	Russia	70.9	Venezuela	66.4
Somalia	41.0	Saudi Arabia	45.3	Spain	71.1	**OCEANIA**	
South Africa	51.4	Singapore	70.2	Sweden	75.3		
Sudan	50.6	Sri Lanka	65.7	Switzerland	71.4	Australia	72.4
Tanzania	44.3	Syria	55.8	Yugoslavia	65.9	New Zealand	71.1

Source: Monthly Bulletin of Statistics, April, 1971, UN

Expectation of Life, in Years

United States			England and Wales		
Period	Male	Female	Period	Male	Female
1850	38.3	40.5	1838–54	39.9	41.9
1900–02	47.9	50.7	1901–10	48.5	52.4
1909–11	49.9	53.2	1910–12	51.5	55.3
1919–21	55.5	57.4	1920–22	55.6	59.6
1929–31	57.7	61.0	1930–32	58.7	62.9
1939–41	61.6	65.9	1937	60.2	64.4
1949–51	65.5	71.0	1948	67.1	71.3

LENGTH OF LIFE OF ANIMALS

Figures in this list are from animals in captivity, because of the difficulty of determining the ages of wild animals.

MAMMALS

(Average Life Span in Years)

Buffalo	10	Jaguar	14
Cat	13-17	Lion	20-25
Chimpanzee	15-20	Monkey (rhesus)	15
Deer (fallow)	10	Mouse	1-2
Dog	13	Sheep	10-15
Elephant	60	Squirrel	9
Goat	10	Tiger	11
Grizzly Bear	20	Wolf	12
Hippopotamus	40	Zebra	22
Horse	20-30		

BIRDS

(Maximum Life Span in Years)

Blue Jay	4	Owl (snowy)	24½
Canada Goose	32	Penguin (king)	26
Canary	24	Pigeon	35
Cardinal	22	Raven	69
Chickadee	7	Robin	12
Condor	52	Skylark	24
Heron	24	Sparrow	20
Macaw (red and blue)	64	Starling	15
Ostrich (African)	50		

FISH

(Maximum Life Span in Years)

Dogfish	2	Mackerel (Pacific)	11
Electric Eel	11½	Perch	11
Flounder	10	Pike	24
Goldfish	25	Seahorse	6
Halibut	40	Sole (Dover)	15
Lamprey	5	Sturgeon	50
Lungfish (African)	17	Trout (rainbow)	4

REPTILES AND AMPHIBIANS

(Maximum Life Span in Years)

Alligator	56	Gila Monster	20
Boa Constrictor	23	King Snake	14½
Bullfrog	15½	Puff Adder	14
Chameleon	3½	Rattlesnake	18½
Cottonmouth	21	Salamander (spotted)	25
Crocodile	13½	Turtle (box)	123
Frog (leopard)	6	Water Snake	7
Garter Snake	6		

Review

1. Determine both the probability and odds for each of the following:
   a) in favour of pulling black ace from a group of cards containing all the aces, kings, queens, and jacks;
   b) against a runner stealing a base if he has a .700 base-stealing average;
   c) a roll of a die will produce an even number;
   d) in favour of a card pulled from a standard deck being red and having a face value less than 7 (assume ace to be high);
   e) against a 60 year old male living until age 70;
   f) in favour of a 28 year old female living another 23 years.

2. Use a tree diagram to determine the probability for each of the following:
   a) against getting a sum of 6 when rolling a die twice;
   b) in favour of a man leaving a building with four different exits and re-entering by the same door;
   c) getting a total value of 31 cents when choosing 3 coins, one at a time, from a bag containing a quarter, a nickel, a dime, a penny and a fifty-cent piece.

Answer Key

A

3. a) 1/2
b) 1/6
c) 0
d) 2/7
e) 5/7
f) 2/3
g) 2/3

4. a) 2/5
b) 2/5
c) 1/5
d) 3/5
e) 1
f) 0

5. a) (1) 2/5
(2) 1/5
(3) 2/25
(4) 3/25
(5) 0
(6) 0
(7) 1

b) (1) 5/12
(2) 1/6
(3) 1/12
(4) 1/8
(5) 0

c) (1) 9/23
(2) 4/23
(3) 2/23
(4) 3/23
(5) 0

6. a) 1/2
b) 1/13
c) 3/13
d) 1/4
e) 5/13
f) 1
g) 0

8. 3. (a) 1:1
(b) 1:5
(c) 0
(d) 2:5
(e) 5:2
(f) 2:1
(g) 2:1

4. (a) 2:3
(b) 2:3
(c) 1:4
(d) 3:2
(e) 5:0 (odds are not usually quoted for sure thing)
(f) 0:5 or 0

5.

(a)(1)	2:3	(b)(1)	5:7	(c)(1)	9:14
(2)	1:4	(2)	1:5	(2)	4:19
(3)	2:23	(3)	1:11	(3)	2:21
(4)	3:22	(4)	3:21	(4)	3:20
(5)	0:25 or 0	(5)	0:24 or 0	(5)	0:23 or 0
(6)	0:25 or 0				
(7)	see 4(e)				

6. (a) 1:1
(b) 1:12
(c) 3:10
(d) 1:3
(e) 5:8
(f) see 4(e)
(g) 0:13 or 0

9. a) P(completing a pass) = 57/100
b) P(getting a hit) = 343/1000
c) P(winning) = 2/15
d) P(A defeating B) = 5/8

10. a) .244
b) P(out) = 5/14; Odds (out) are 5:9
c) P(scoring) = 17/62; Odds(scoring) are 17:45
d) P(missing) = 6/25; Odds(missing) are 6:19

11. a) P(not completing) = 7/20; Odds(not completing) are 7:13
b) P(completing) - 13/20; Odds(completing) are 13:7

12. P(hired) = 5/29; Odds(hired) are 5:24

13.

	Probability	Odds
a)	1/3	1:2
b)	5/12	5:7
c)	1/4	1:3
d)	7/12	7:5

14. P = 3/10; Odds are 3:7

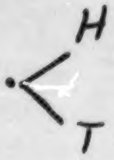
15.

a)	Probability	Odds
1)	94.307%	47:3
2)	88.299%	22:3
3)	57.548%	29:21
4)	6.192%	3:47

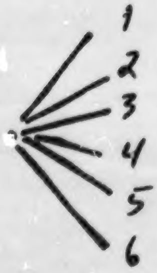
b)	Probability	Odds
1)	97.291%	97.3
2)	96.046%	24:1
3)	90.568%	91:9
4)	63.481%	63:37

c) Approximately 4:21
d) 1019

1. a)



b)



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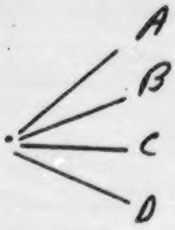
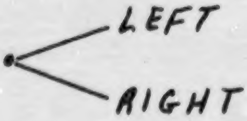
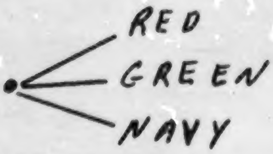


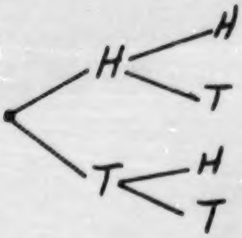
d)



e)



2. a)



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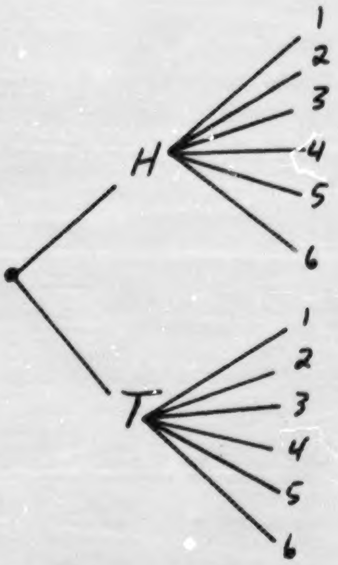

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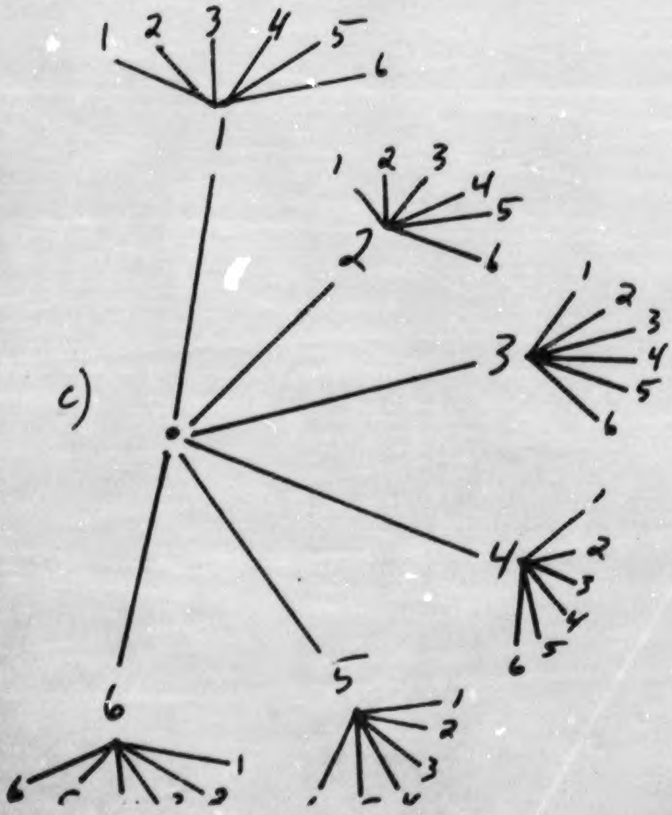
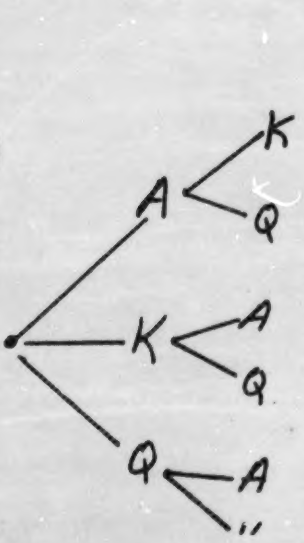


d)



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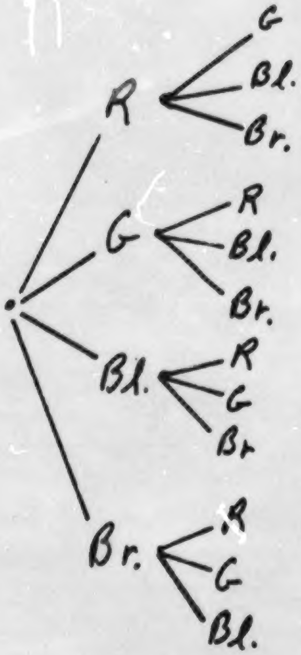
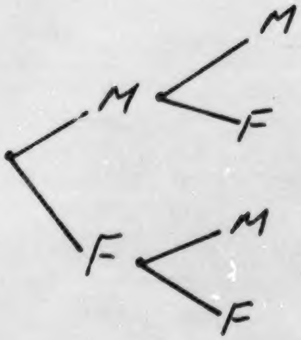


f)



3. a) 1/4
   b) 2/4
   c) 5:1
   d) 1
   e) 1:5
   f) 1:3
   g) 11/12
   h) 0
   i) 1:1
   j) 0

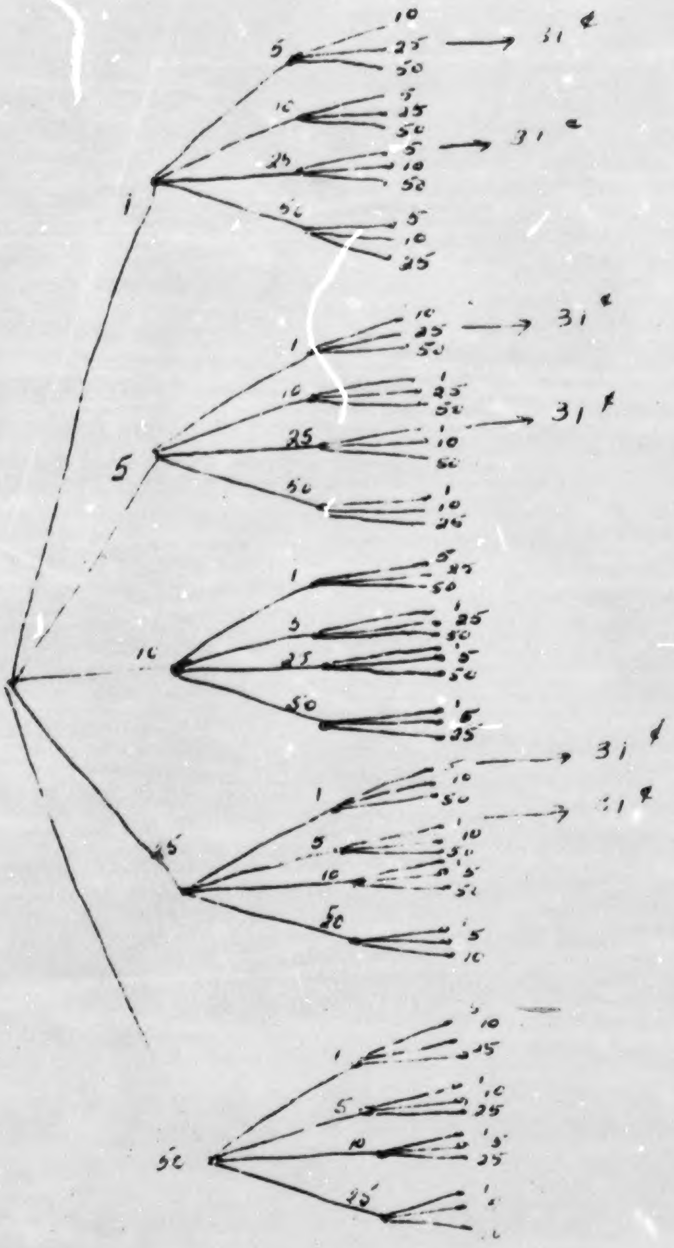
Review Answer Key

1.	Probability	Odds
a)	1/8	1:7
b)	3/10 or .300	3:7
c)	1/2	1:1
d)	5/26	5:21
e)	approx. 26.089%	approx. 13:37
f)	approx. 95.756%	approx. 24:1

2. a) 31/36--see diagram from section c

   b) 1/4

2. c) 6/60 = 1/10


31¢
31¢
31¢
31¢
31¢
31¢

OP.X. OWNING AND OPERATING AN AUTOMOBILE

Note: When purchasing a new or used vehicle you should be aware that a 5% Manitoba provincial sales tax will be added to the cost. In addition, if repairs or other expenses are incurred with the purchase, these items are also subject to a 5% sales tax. There is no sales tax on lien searches or prepayment penalties if paying off existing liens.

1. Harry has found a car that he likes and wants to buy. The price of the car is $1895. Harry's friend examined the car and recommended that Harry install a different carburetor. The new carburetor would cost $89. A tune-up was also recommended at a cost of $50. If provincial sales tax of 5% is applied to all items, what will it cost Harry to buy the car and put it into acceptable running condition?

2. Linda's father bought her a car to use to go to college. The car itself costs $2300, a diagnostic test, $20; a lien search, $3. If provincial sales tax of 5% is added, what did it cost for Linda's car?

3. Scott wanted to buy an old "clunker" and restore it. He hunted around and found an old '56 Ford, 2 door hardtop. He bought it for $800 and started to repair it. When finished he had recorded the following costs: engine work, $700; electrical, $150; radio, $300; tires, $300; interior, $900; exterior, $600; suspension, $100; exhaust, $140; others, $190. If provincial sales tax of 5% was added, what did it cost Scott to purchase the car and restore it?

4. Mike wanted to buy privately a fairly new used car. He responded to an ad in Auto Trades and decided to purchase a car only 6 months old with 17 300 KM on it. The purchase price was $9,595. A diagnostic fee was $30; a lien search, $3. There was a lien against the car. Mike agreed to pay off the loan but a fee of $25 was charged to him. If provincial sales tax is 5%, what was the total cost of purchasing the car?

5. Allison wanted a small car to use for running errands and shopping. She and her husband picked out a Honda. The purchase price was $3800. It needed new tires which cost $300 and some work on the transmission which cost $180. If provincial sales tax was 5%, what was the total cost of the car?

6. Determine the cost of purchasing the following new vehicles:

a)	Base price	$8105
	Options	
	Radio (AM-FM Stereo)	$ 240
	W.W. tires	$ 75
	V-8 engine	$ 190
	Power windows	$ 325
	Tinted glass	$ 90
	Metallic paint	$ 113
	Pin stripping	$ 82
	Cruise control	$ 170
	Trade-in allowance	$3900
	Sales tax 5%	

b)	Base price	$10 900
	Options	
	Diesel engine	$ 1 100
	Heavy duty suspension	$ 60
	Deluxe sound system	$ 300
	Deluxe decor group	$ 750
	Roof rack	$ 216
	Vinyl side mouldings	$ 193
	Power windows	$ 286
	Power door locks	$ 136
	Tinted glass	$ 95
	W.W. tires	$ 75
	Protective mouldings	$ 60
	Cassette deck	$ 225
	Halogen lights	$ 90
	Trade-in allowance	$ 6 300
	Sales tax 7%	

c)	Base Price	$11 229
	Options	
	Overload springs	$ 260
	Second axle	$ 381
	Hoist and steel box	$ 3 520
	Radial tires	$ 300
	Radio	$ 130
	Power steering	$ 105
	Block heater	$ 32
	Heavy duty battery	$ 60
	Power breaks	$ 120
	Trade-in allowance	$ 3 300
	Sales tax 6%	

7. Determine the cost of purchasing each of the following cars. Discuss the problem of deciding which is the "better buy". Each car is a 4-door sedan.

	Car 1	Car 2	Car 3
Base price	$6490	$6740	$6920
Options			
Engine	-	$ 475	$ 240
	(4 cycle)	(diesel)	(V-6)
Radio	$ 115	$ 138	$ 96
W.W. tires	$ 75	$ 75	$ 75
Automatic transmission	$ 250	$ 273	$ 215
Trade-in allowance	$2500	$2850	$2700
Sales tax	5%	5%	5%

NOTE: Car 1 - rear wheel drive
Cars 2 and 3 - front wheel drive
Cars 1 and 3 - service available locally
Car 2 - closest service is 20 miles away

8. For each of the following car purchases calculate the cost of purchasing the car on a monthly payment plan. Also calculate the finance costs if you bought the car in this manner.

Example: The total cost of the car Linda wants is $7,600. She has a down payment of $1,500. Linda can finance the rest of the cost for 36 months. Her monthly payment will be $200. Calculate the total cost of the vehicle if purchased in this manner. Calculate the finance charges paid on the purchase.

Solution:
Total paid in installments: $200 x 36 = $7,200
Total cost of vehicle: $7,200 + $1,500 = $8,700

Therefore, the finance charge will be the difference between the total cost of the vehicle if purchased in this manner and the cost if purchased for cash.

Finance Charges: $8,700 - $7,600 = $1,100

Cash Price	Down Payment	Installments		Total Installment Price	Finance Charges
		Monthly Payment	Number of Months		
a) $ 5 000	$1 500	$170.52	24		
b) $ 6 000	$1 000	$175.10	36		
c) $ 9 000	$1 500	$262.66	36		
d) $11 000	$1 000	$358.30	36		
e) $14 700	$1 000	$397.85	48		

2 1. Complete the following chart.

	Litres	Cost/Litre	Total Cost
a)	90	35.7¢	________
b)	18	36.2¢	________
c)	51.3	37.4¢	________
d)	87.4	35.2¢	________
e)	118	33.4¢	________
f)	76.1	39.4¢	________
g)	58.2	____	$22.40
h)	82.7	____	$35.60
i)	____	38.5¢	$29.77
j)	____	37.9¢	$26.40
k)	____	36.5¢	$22.25

2. The cost can be estimated. Round off the number of litres and cost/litre to whole numbers and multiply mentally. For example, 56.7 L at 32.4¢/L becomes 60 L x 30¢/L = $18.00.
Actual cost is 56.7 x 32.4 = $18.37.

Estimate the following fuel bills.

	Litres (Approximate)	Cost/Litre (Approximate)	Approximate Cost
a)	63.1	32.8¢	
b)	78.2	34.2¢	
c)	47.1	32.3¢	

3. Determine the distance travelled using the odometers given below.

	BEGINNING READING	FINAL READING	DISTANCE TRAVELLED
a)	0 3 9 2 8 7 ‖ 6	0 4 0 3 2 4 ‖ 3	________
b)	0 7 6 5 4 3 ‖ 2	0 7 6 9 5 6 ‖ 7	________
c)	0 0 1 2 7 9 ‖ 8	0 0 1 4 5 4 ‖ 3	________
d)	0 0 3 8 6 3 ‖ 3	0 0 7 3 7 5 ‖ 2	________
e)	6 2 3 9 1 4 ‖ 5	6 4 8 7 2 1 ‖ 8	________

4. Fuel Economy (Gas Consumption)

Fuel economy is stated as the number of litres of gas used to travel 100 kilometres. Fuel economy is like golf; the lower the score, the better it is.

Sample Fuel Economy

a)	Volkswagen Rabbit Diesel	5.3 L/100 km
b)	Pontiac Sunbird	8.6 L/100 km
c)	Dodge Diplomat	11.7 L/100 km
d)	Chevrolet Corvette	15.1 L/100 km
e)	Rolls Royce	20.6 L/100 km

If fuel costs 34.3¢/L, determine the cost to drive each car 100 km.

Example: Volkswagen Rabbit Diesel
5.3 x 34.3 = $1.82/100 km

5. Determining Your Own Fuel Economy

$$\frac{\text{Litres of gas used}}{\text{Kilometres driven}} \times 100 = \text{fuel economy}$$

Mary filled up her gas tank with 60.0 L. She had driven 800 km between fillups. Her fuel economy is $\frac{60.0}{800} \times 100 = 7.5$ L/100 km.

Harry bought 76.2 l after he drove 523.1 km. His fuel economy is $\frac{76.2}{523.1} \times 100 = 14.6$ L/100 km (one decimal)

Which driver (or car) is more economical?

Complete

ODOMETER READING		KILOMETRES DRIVEN	LITRES TO FILL	FUEL ECONOMY L/100 km
BEGINNING	FINAL			
71 416.0	71 739.0		57.6	
23 165.2	23 721.9		54.8	
87 158.1	88 031.4		97.2	
15 623.1	16 341.8		37.2	
135 714.8	136 028.3		43.9	
874 922.6	875 211.2		18.8	

6. If fuel costs 35.1¢/L, determine the cost to drive 100 km in each of the cars in question 5.

7. Keeping Records of Your Gas Purchases

Bill travelled in his van to a ski area in Quebec and kept track of his gas purchases. Complete the table. He is interested in his fuel economy and his cost/100 km.

	DATE	ODOMETER READING AT FILL UPS	KM DRIVEN	LITRES PURCHASED	COST/L	COST OF FILL UP	FUEL ECONOMY L/100 km	COST/ 100 km
a)	Dec. 26	51 372	—	Full Tank				
b)	Dec. 26	51 570		27.2	34.3			
c)	Dec. 26	51 727		27.2	32.1			
d)	Dec. 28	51 947		41.8	32.3			
e)	Dec. 29	52 280		51.3	31.8			
f)	Dec. 31	52 565		52.2	31.4			
g)	Jan. 2	52 848		59.1	32.2			
h)	Jan. 2	53 056		33.1	32.4			
i)	Jan. 2	53 334		52.7	33.1			
j)	Jan. 3	53 601		46.3	33.2			
		TOTAL						

k) What was the total quantity of gas purchased?
l) What was the total cost?
m) What was the total distance driven?
n) What was the fuel economy for the whole trip?
o) What was the cost/100 km for the whole trip?

8. George is interested only in the cost/100 km. He does not use the fuel economy (L/100 km). This is how he does it:

$\frac{\text{Cost For Fill Up}}{\text{Distance Driven}} \times 100 = \text{cost/100 km} =$

George recorded the following information on a recent trip. Complete the table.

DATE	ODOMETER READING	KM DRIVEN	COST OF FILL UP	COST/100 KM
July 2	61 347.9	—	Full Tank	
July 2	61 763.2		20.06	
July 3	62 005.8		15.98	
July 4	62 429.1		19.75	
July 5	62 988.4		24.13	

9. Repairs and Maintenance

A car needs to have parts replaced and regular maintenance performed. Bob has a compact, four-cylinder car. The mechanic charges $18.00/h to work on the car. The following table should help organize the costs for some of the services. Complete the table.

ITEM	NUMBER NEEDED	COST/ITEM	PARTS COST	INSTALLATION TIME (h)	LABOUR COST	TOTAL COST OF REPAIR (PARTS + LABOUR)
Oil	4	$ 1.60/L	$6.40 (4 X $1.60)	0.2	$3.60 (0.2 X $18.00)	$10.00 ($6.40 + $3.60)
Oil Filter	1	$ 3.50		0.1		
Air Filter	1	$ 5.00		none		
Fuel Filter	1	$ 4.25		0.1		
Fan Belt	2	$ 5.00		0.2		
Headlights	2	$ 5.50		0.2		
Wiper Blades	2	$ 5.00/pr		0.1		
Exhaust Pipe	1	$38.25		0.6		
Muffler, Tail Pipe	1	$43.00		0.8		
Shock Absorbers	4	$15.95		1.1		
Tire Rotation	none	none		0.3		
Tires	4	$55.00		none		
Tire Balancing	none	none		0.4		
Battery	1	$49.00		none		
Spark Plugs (Tuneup)	6	$ 1.40		1.2		
Lubrication	1	$ 1.80/L		0.3		
Front End Alignment	none	none		1.4		

10. Depreciation

The amount that a car decreases in value as it gets older and driven more is called depreciation. A car depreciates the most during the first year.

The average depreciation rates based on the cost of the new car are:

First Year	- 35%
Second Year	- 17%
Third Year	- 13%
Fourth Year	- 11%
Fifth Year	- 8%

Example: A new Toyota Celica sells for $13 520. How much will the car depreciate in each of the first five years?

Year		Amount
1	$13 520 × 35% =	$4732.00
2	$13 520 × 17% =	2298.40
3	$13 520 × 13% =	1757.60
4	$13 520 × 11% =	1487.20
5	$13 520 × 8% =	1081.60
		$11 356.80 Total depreciation after 5 years

At the end of five years, the Celica would be worth approximately $13 520 - 11 356.80 = $2 163.20.

Therefore, if you wish to estimate the value of a vehicle at the end of a certain number of years you must subtract the total amount of depreciation up to that year from the original cost.

Determine the amount that each of these new cars will depreciate during the years given:

	Car	New Car Price	Year	Amount of Depreciation
a)	Malibu	$11 000	Third	
b)	Mustang	$10 899	Second	
c)	New Yorker	$14 472	First	
d)	Chevette	$ 7 000	Fourth	

Find the value of each car at the end of the given year. Remember: Value = Cost - Total Depreciation.

	Car	New Car Price	End of Year	Total Depreciation	Value of Car
e)	Concorde	$10 582	4		
f)	Bobcat	$ 8 536	2		
g)	Accord	$ 8 569	1		
h)	Lynx	$ 7 600	3		

11. Find the total operating costs for each of the following vehicles for a one-year period.

Item	Car A	Car B	Car C
Licence	$ 31.00	$ 19.00	$ 27.00
Insurance	$ 420.00	$ 238.00	$ 350.00
Repairs	$ 216.00	$ 543.00	$ 278.00
Maintenance	$ 147.00	$ 196.00	$ 133.00
Depreciation	$3400.00	$2840.00	$3136.00
Gasoline	$ 806.25	$ 586.33	$ 718.62

Review

1 1. What is the total cost of purchasing a car if purchase price is $4550, sales tax, 5%; lien search, $3.50; transfer of lien, $25.00; and needed repairs at time of purchase, $260.00?

2. Find the cost of purchasing a new van with the options given, a trade-in allowance of $5400, and provincial sales tax of 6%.

Base price	$11 400
Air conditioner	$ 920
Power windows	$ 240
Power locks	$ 142
Heavy duty suspension	$ 105
Conversion	$ 4 107

3. What are the finance charges on a car purchased for $8640 if the monthly payments are $309.57 for 36 months?

2 1. Complete the following chart.

	Odometer Reading at Fill-up	km Driven	Litres Purchased	Cost Per Litre	Cost of Fill-up	Fuel Economy L/100 km	Cost/ 100 km
a)	83 265		Full tank				
b)	83 701		61.3	35.9			
c)	84 215		67.7	37.2			
d)	84 687		57.4	36.5			
e)	85 267		65.8	38.4			
f)	85 700		55.9	39.1			
g)	86 260		63.0	36.7			

h) Find the total amount of gas purchased.

i) Find the total distance travelled.

j) What was average fuel economy for the whole trip?

k) Find the total cost.

l) What was the cost/100 km for the whole trip?

2. Complete the following chart listing some of the maintenance expenses for a vehicle. Labor cost is $24/hour.

Item	Number Needed	Cost/ Item	Cost of Parts	Installation Time (hour)	Labor Cost	Total Cost
Oil Filter	1	5.25		.1		
Oil	5L	1.65		None		
Air Filter	1	6.95		None		
Fuel Filter	1	4.50		.1		
Antifreeze	5L	9.00/5L		.2		
Tail Light	2	.90 ea		.3		
Fuse	5	.40 ea		.2		
Spark Plugs	8	1.70		1.2		
Grease Job	1	3.50		None		
Fan Belts	2	5.35		.6		

3. Determine the depreciation of the following vehicles:

a) G.M.C. van sells for $15 790 new, during the first year.
b) Mazda RX-7 sells for $11 450 new, during the third year.
c) Chrysler's Omni sells for $8430, during the second year.

4. Determine the value of a Ford wagon at the end of each of the first four years if it cost $13 990 new.

5. Determine the total operating costs for each of the following vehicles for a one-year period.

Item	Car A	Car B	Car C
Licence	$ 39.00	$ 28.00	$ 21.00
Repairs	$ 393.80	$ 176.40	$ 203.50
Insurance	$ 520.00	$ 396.00	$ 224.00
Depreciation	$4986.80	$3828.73	$3212.19
Maintenance	$ 347.31	$ 480.29	$ 103.56
Gasoline	$1214.45	$ 681.92	$ 705.62
Finance Costs	$4291.70	-	$1621.84

Answer Key

1

1. $2,135.70
2. $2,439.00
3. $4,389.00
4. $10 134.25
5. $4,494
6. a) $5764.50
   b) $8759.02
   c) $13 607.22
7. Car 1 $4651.50
   Car 2 $5093.55
   Car 3 $5088.30
8. a) $5,592.48; $592.48
   b) $7,303.60; $1,303.60
   c) $10 955.76; $1,955.76
   d) $13 898.80; $2,898.80
   e) $20 096.80; $5,396.80

2.

1. a) $32.13
   b) $6.52
   c) $19.19
   d) $31.47
   e) $39.41
   f) $29.98
   g) 38.5¢/L
   h) 43¢/L
   i) 77.3 L
   j) 69.7 L
   k) 61 L

2.

	Exact	Approximate
a)	$20.70	$18.00
b)	$26.70	$24.00
c)	$15.21	$15.00

3. a) 1036.7 km
   b) 413.5 km
   c) 174.5 km
   d) 3491.9 km
   e) 24 807.3 km
4. b) $2.95/100 km
   c) $4.01/100 km
   d) $5.18/100 km
   e) $7.07/100 km
5. a) 323 km; 17.8 L/100 km
   b) 556.7 km; 9.8 L/100 km
   c) 873.3 km; 11.1 L/100 km
   d) 718.7 km; 5.2 L/100 km
   e) 313.5 km; 14.0 L/100 km
   f) 288.6 km; 6.5 L/100 km
6. a) $6.25/100 km
   b) $3.44/100 km
   c) $3.90/100 km
   d) $1.83/100 km
   e) $4.91/100 km
   f) $2.28/100 km

7.	a)	-	-	-	-
	b)	198 km	$9.33	13.7 L/100 km	$4.70/100 km
	c)	157 km	$8.73	17.3 L/100 km	$5.55/100 km
	d)	220 km	$13.50	19.0 L/100 km	$6.14/100 km
	e)	333 km	$16.31	15.4 L/100 km	$4.90/100 km
	f)	285 km	$16.39	18.3 L/100 km	$5.75/100 km
	g)	283 km	$19.03	20.9 L/100 km	$6.70/100 km
	h)	208 km	$10.72	15.9 L/100 km	$5.15/100 km
	i)	278 km	$17.44	19.0 L/100 km	$6.27/100 km
	j)	267 km	$15.37	17.3 L/100 km	$5.76/100 km

k) 390.9 L
l) $126.82
m) 2229 km
n) 17.5 L/100 km
o) $5.69/100 km

8.	a)	-	-
	b)	415.3 km	$4.83/100 km
	c)	242.6 km	$6.59/100 km
	d)	423.3 km	$4.67/100 km
	e)	559.3 km	$4.31/100 km

9.	Oil Filter	$3.50	$1.80	$5.30
	Air Filter	$5.00	-	$5.00
	Fuel Filter	$4.25	$1.80	$6.05
	Fan Belt	$10.00	$3.60	$13.60
	Headlights	$11.50	$3.60	$15.10
	Wiper Blades	$5.00	$1.80	$6.80
	Exhaust Pipe	$38.25	$10.80	$49.05
	Muffler, Tail Pipe	$43.00	$14.40	$57.40
	Shock Absorbers	$75.80	$19.80	$95.60
	Tire Rotation	-	$5.40	$5.40
	Tires	$220.00	-	$220.00
	Tire Balancing	-	$7.20	$7.20
	Battery	$49.00	-	$49.00
	Spark Plugs (Tuneup)	$8.40	$21.60	$30.00
	Lubrication	$1.80	$5.40	$7.20
	Front End Alignment	-	$25.20	$25.20

10. a) $1430
b) $1852.83
c) $5,065.20
d) $560

e) $2,539.68
f) $4,097.28
g) $5,569.85
h) $2,660.00

11. $5020.25; $4422.33; $4642.62

Review

1
1. $5066.00
2. $12 204.84
3. $2504.52

2
1.

	Km Driven	Cost of Fill-Up	Fuel Economy L/100 km	Cost/ 100 km
a)	-	-	-	-
b)	436	$22.01	14.1 L/100 km	$5.05/100 km
c)	514	$25.18	13.2 L/100 km	$4.91/100 km
d)	472	$20.95	12.2 L/100 km	$4.44/100 km
e)	580	$25.27	11.3 L/100 km	$4.36/100 km
f)	433	$21.86	12.9 L/100 km	$5.05/100 km
g)	560	$23.12	11.3 L/100 km	$4.13/100 km

h) 371.1 L
i) 2995 km
j) 12.5 L/100 km
k) $138.39
l) $4.66/100 km

2.

	Cost of Parts	Labor Cost	Total Cost
Oil Filter	$ 5.25	$ 2.40	$ 7.65
Oil	$ 8.25	-	$ 8.25
Air Filter	$ 6.95	-	$ 6.95
Fuel Filter	$ 4.50	$ 2.40	$ 6.90
Antifreeze	$ 9.00	$ 4.80	$13.80
Tail Light	$ 1.80	$ 7.20	$ 9.00
Fuse	$ 2.00	$ 4.80	$ 6.80
Spark Plugs	$13.60	$28.80	$42.40
Grease Job	$ 3.50	-	$ 3.50
Fan Belts	$10.70	$14.40	$25.10

3. a) $5526.50
   b) $1488.50
   c) $1433.10

4. End of First Year $9093.50
   Second Year $7547.61
   Third Year $6566.42
   Fourth Year $5844.11

5. Car A $11 793.06
   Car B $4491.34
   Car C $6091.71

OP.XI. COSTS OF LIVING ON YOUR OWN

The factors involved in establishing a residence will vary from region to region throughout the Province.

This makes it difficult to set a problem or example that will cover all situations.

The project that is included is intended only as a possible starting point for the teacher. The project can be refined to meet the individual student's needs.

The student should become aware of the actual costs involved in establishing a residence in an area where they might wish to work and live.

1. Calculate monthly take-home pay if you earn $ ________ per hour and work an average of 175 hours per month. You must determine your net claim code for income tax purposes. Using tax tables you should estimate monthly CPP, UIC, and Income Tax to be paid. In addition, you pay group life insurance premiums of $ ________ a month and pay into a company pension plan at the rate of 1.1% of gross monthly earnings.

2. Prepare a realistic budget which truly shows how you would handle your own money in these circumstances. First decide what you will include in your budget, then decide what amounts you will require for each category. (Check newspapers, etc., to help you decide how much to allow for. Presume that you will be sharing unfurnished and rented premises with one friend.)

3. You have savings of $1200, which you may decide to spend if you wish or which you may invest at 17.5% interest. Calculate how much interest you would earn if you decide to keep it invested for at least 2 years, and interest is compounded semi-annually. How much will be in your account at the end of 2 years (a) if you do not add to it? (b) if you save an additional $300 every 6 months?

4. Prepare a scale drawing of your apartment (1 cm = 1 metre). Show furniture and appliance placement, location of windows and doors, etc.

5. List all the furniture and furnishings, room by room, that you will need, together with an estimate of costs. (Check newspaper ads, catalogues, etc.) Calculate total cost, estimate amount of monthly payment you can make (you may, if you wish, use some or all of your $1200 savings to purchase these items). Estimate how long a finance

term you will need, calculate credit costs, add them on and divide by the number of months over which you are financing your purchases, to determine the exact amount of your monthly payment. Does this fit into your budget? If not, make necessary revisions (to budget, requirements, finance arrangements) to make it work.

6. List all the "groceries"--including cleaning supplies, etc., normally purchased at a supermarket, needed to stack your empty shelves and start up housekeeping. Calculate prices (use newspaper flyers, etc.) and total.

7. List groceries and prices needed to replenish your supplies after I week. Does the total fit your budget? If not, make whatever adjustments are necessary.

8. Calculate transportation expenses, (a) if you were to buy a car--give details: make, model, price, finance charges, estimated mileage, gas and repair bills, etc.; (b) if you travel by public transit. (You live 6 km away from work.) Which will you do and why?

9. Plan a holiday for next year. Outline costs and your way of financing (saving for) the holiday.